TONAWANDAS URBAN AREA REPORT

URBAN AREA REPORT

NORTH TONAWANDA AND TONAWANDA

1949

STATE OF NEW YORK

THOMAS E. DEWEY, GOVERNOR

REPORT ON STATE ARTERIAL HIGHWAYS IN THE TONAWANDA AND NORTH TONAWANDA URBAN AREA

Prepared by

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STATE OF NEW YORK
DEPARTMENT OF PUBLIC WORKS
ALBANY 1

May 26, 1949

Hon. Eugene H. Duffy
Mayor of the City of Tonawanda
Tonawanda, New York

Hon. Stanley M. Rosinski
Mayor of the City of North Tonawanda
North Tonawanda, New York

Hon. Roy R. Brockett, Chairman
Erie County Board of Supervisors
Buffalo, New York

Hon. C. Warren Silsby, Chairman
Niagara County Board of Supervisors
Lockport, New York

Gentlemen:

It is a distinct pleasure for me to submit to you the accompanying Urban Area Report for the Cities of Tonawanda and North Tonawanda and their environs, which has been recently completed by our Department. This presentation contains a recommended master plan for arterial route improvements within your urban areas and describes in considerable detail the extensive traffic and planning studies upon which it has been predicated.

While Tonawanda and North Tonawanda are separate municipalities politically, they are one community in a

social, geographic and economic sense and are accordingly treated in this report. The traffic problems of the "Twin Cities" are so closely related that they cannot be studied independently, but must be solved by a unified and integrated plan covering both communities.

Although the arterial route phase of our Department's program is relatively new, having been authorized by Highway Law amendments enacted during 1944 and 1945, fifty-nine New York State cities have been surveyed to date and sixteen urban area reports have been presented since active work was undertaken early in 1946. The Tonawandas study, which is the seventeenth to be completed, was initiated with the urban area traffic survey conducted during August, 1948. The subsequent detailed analysis of the resulting information disclosed the character and extent of the serious problems affecting both local and through travel over the cities' thoroughfares.

The recommended primary plan for arterial routes has been designed to meet these current problems and additional traffic needs which may develop within a reasonable period of forecast. The importance of harmonizing new proposals with the existing physical structure of the community and its potential development was fully recognized. It is believed the essential requirements in this respect have been satisfactorily met.

The total cost of the improvements set forth in the primary plan is estimated at $4,241,000. Right of way costs

for state arterial routes within the City of Tonawanda and the City of North Tonawanda are estimated at $284,000 and $116,000 respectively. Under the provision of the Arterial Law fifty per cent of the required right of way costs would be assumed by the cities. This would total $142,000 for Tonawanda and $58,000 for North Tonawanda, in the amounts required for each individual project after its details are agreed upon and at the time each is scheduled to be undertaken.

A basic advantage accruing from the preparation and adoption of a master plan for arterial route improvements is the certainty that each unit project will, upon its advancement to completion, become a part of a comprehensive and agreed upon whole undertaking. Such procedure will permit local private and public enterprise to coordinate their own proposals with the approved major route plan and undertake new projects with greater confidence.

Local approvals are prerequisite to state legislative action incorporating the route descriptions into the Highway Law and until such legal designation is made, detailed project construction plans involving routes not already covered in the Highway Law may not be advanced.

With these facts in mind and in recognition of the importance of prompt action in expediting state and city traffic movements within the urban areas, it would be appreciated if you and your associates will review the

accompanying report at your early convenience and advise me if the recommended master plan for arterial routes contained therein meets with your general approval.

Respectfully submitted,

B. D. TALLAMY
Superintendent of Public Works

ACKNOWLEDGMENTS

The assistance of the following agencies and their cooperation in furnishing material and information essential to the preparation of this report is sincerely appreciated and gratefully acknowledged.

CITY OF TONAWANDA
- Department of Engineering
- Department of Police
- City Assessor's Office
- Public Library

CITY OF NORTH TONAWANDA
- Department of Engineering
- Department of Police
- City Assessor's Office
- Public Library

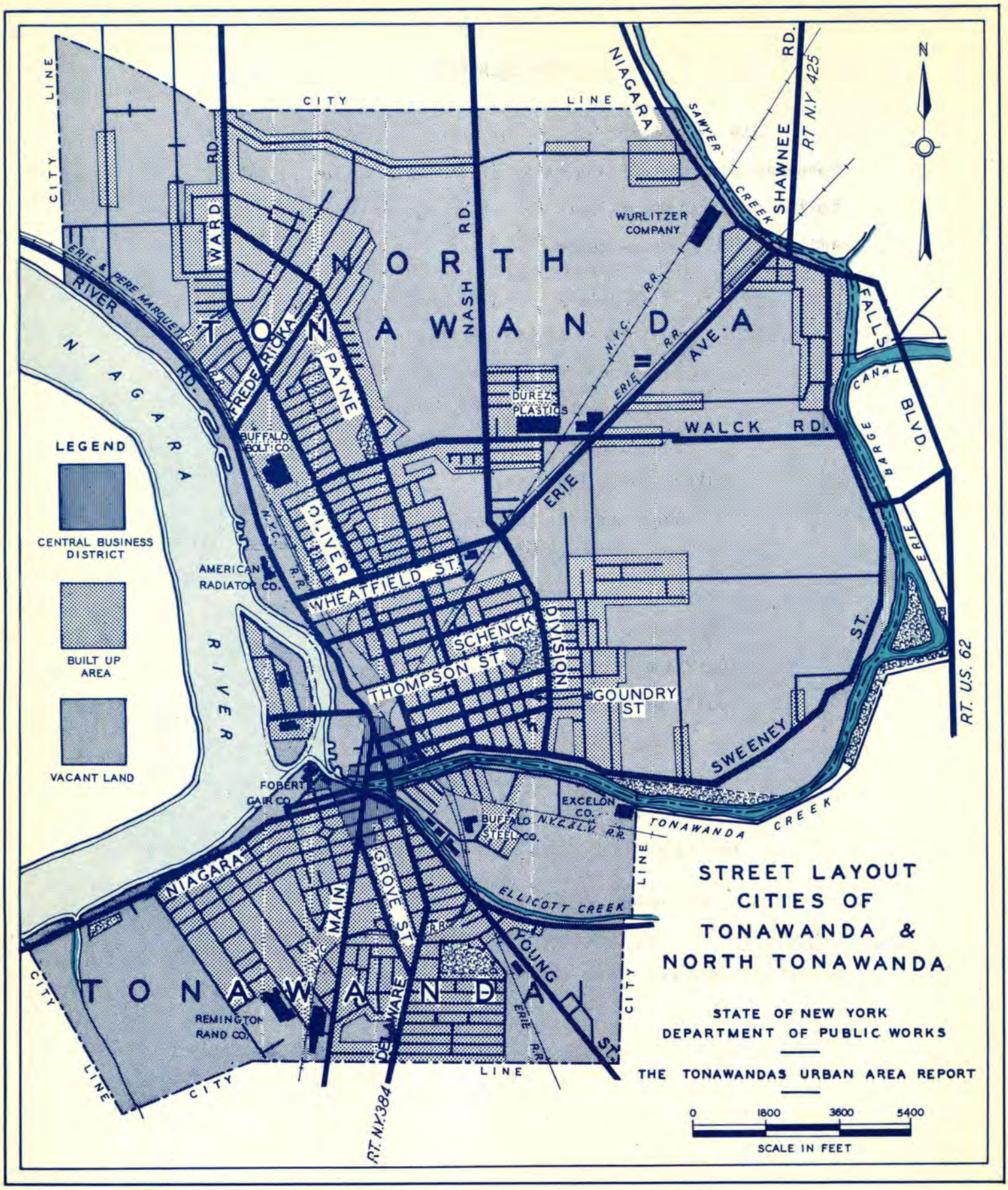
TONAWANDAS CITY PLANNING ASSOCIATION, INC.

COUNTY OF ERIE
- Sheriff's Office

COUNTY OF NIAGARA
- Sheriff's Office

NEW YORK STATE DEPARTMENT OF COMMERCE

Acknowledgment is also made of important material and aid freely contributed by the many public spirited organizations and residents of the area.



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SUMMARY OF RECOMMENDATIONS

SUMMARY OF RECOMMENDATIONS

The report contained in the following pages sets forth specific recommendations for a system of arterial routes in the Cities of Tonawanda and North Tonawanda.

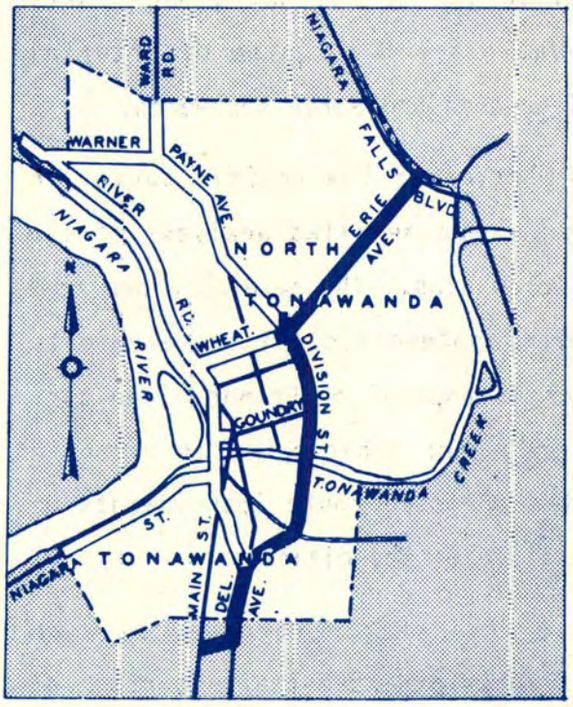
Following the completion of the traffic survey in August 1948, the Department made detailed analyses of the traffic movements in the Tonawandas. The data obtained from these traffic studies were supplemented with related city planning information, such as population trends, land use, increases in population and motor vehicle use in order to determine the effect of the proposed route improvements on the economic and social welfare of the cities.

Upon completion of the Niagara Thruway between Buffalo and Niagara Falls it is expected that a portion of north-south traffic now passing through the "Tonawandas" will be diverted to the Thruway. Diversion of this traffic has been considered in the Department's Plan which proposes a coordinated system of arterial routes designed to expedite the remaining traffic movements in the area. The recommended Plan is described briefly as follows:

ARTERIAL ROUTES

The arterial route sections designated as primary are those shown by the Department's study as necessary to eliminate estimated capacity deficiencies along major north-south routes within the period of forecast. Those designated as supplementary are indicated as component parts of the ultimate overall plan with no improvements contemplated during the period of forecast.

DELAWARE-DIVISION STREET ARTERIAL ROUTE



Primary Plan
In City of Tonawanda

From the south city line on Delaware Avenue, the planned route would follow along Delaware Avenue to Grove Street and then swing northeasterly over new location to State Street. The route would then extend along State Street, cross under the Erie Railroad tracks to the intersection of Young Street. The present grade crossing west of Young Street is to be eliminated under the grade crossing elimination program for the Twin Cities. From this point the route would continue in a northerly direction over new right of way, with bridge structures over Ellicott Creek, the New York Central and Lehigh Valley Railroad tracks, and over East Niagara Street and Tonawanda Creek. A surface connection is planned at Fillmore Avenue. The length of this portion of the arterial route would be 1.75 miles.

The Delaware Avenue portion of the route would be 60 feet in width, necessitating the acquisition of additional

right of way. The section between Grove Street and Young Street would consist of a 44 foot pavement and the portion from Young Street to Tonawanda Creek at the north city line would be a four lane roadway with a four foot separating mall.

Primary Plan In
City of North Tonawanda

From the south city line of North Tonawanda at the required Tonawanda Creek Bridge the route would continue northerly along Division Street to the intersection of Erie Avenue and Wheatfield Street where it would swing northeasterly along Erie Avenue to connect at the city line with Niagara Falls Boulevard, State Route 18; length 3.00 Miles.

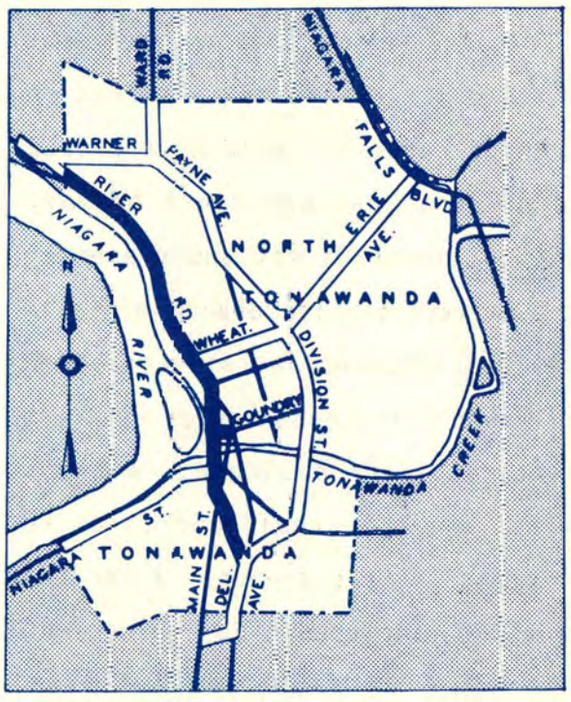
The four lane structure across Tonawanda Creek would descend to grade on Division Street near Tremont Street with ramp connections to Sweeney Street. Division Street, between Tremont Street and Erie Avenue would be 24 feet wide on existing right of way. Should traffic volumes require additional travel lanes, added capacity could be provided along the abandoned International Railway right of way, located on the west side of Division Street and presently owned by the City of North Tonawanda. The abandoned railroad fill on both sides of all intersecting streets along Division Street would be removed for a distance of at least 100 feet to provide additional sight distance. A short section of Wheatfield Street would be realigned so as to intersect Division Street opposite Erie Avenue. A surface connection to Nash Road would be included. No improvement

is contemplated for the portion of the route along Erie Avenue within the period of forecast.

HIGHWAY CONNECTION OUTSIDE THE CITY - PRIMARY PLAN

In order to provide greater flexibility of vehicular flow into the area, the Department has planned a short connection of new state highway at a point just south of the Tonawanda city line. This east-west highway link would join Military Road (Route 265) with Delaware Avenue (Route 384). Located on new alignment, sufficient right of way would be acquired so as to permit future widening of the 24 foot pavement now planned. The route would be about 0.36 miles long.

SEYMOUR-RIVER ROAD ARTERIAL ROUTE



Primary Plan
In City of Tonawanda

This arterial route would start at the intersection of Grove Street with the planned Delaware-Division Street Route and follow along Grove Street, pass under the existing bridge of the New York Central Railroad to a point beyond N. Minerva Street where it would then

continue northwesterly on new alignment to the intersection of Main and Fletcher Streets. From this point the route would follow Seymour Street to Niagara Street and extend northward on new location to a planned four lane bridge over Tonawanda Creek at the north city line. The portion of the route along Grove Street and Seymour Street would be 40 and 44 feet wide respectively with the bridge approach north of Niagara Street planned as a 52 foot pavement. The length of this portion of the arterial route in Tonawanda would be 1.04 miles.

Primary Plan in
City of North Tonawanda

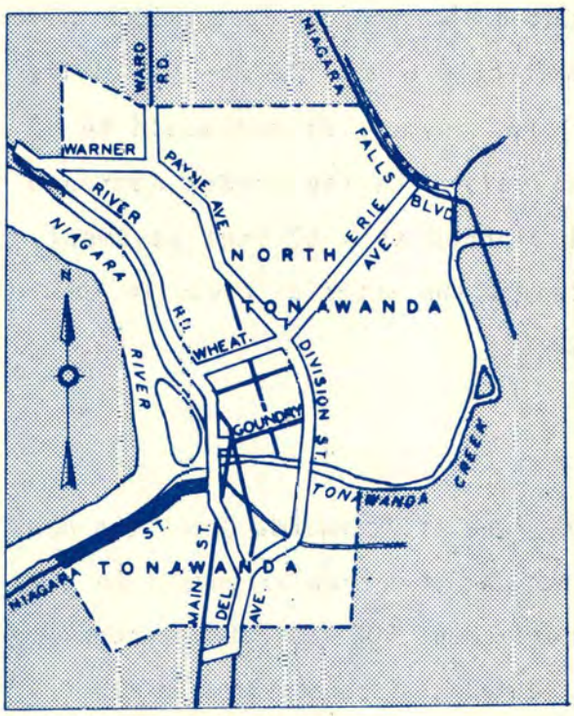
From the south city line at Tonawanda Creek the new arterial would continue northward on new alignment to the intersection with River Road about 500 feet above Thompson Street. Provisions would be made for connections at Goundry and Thompson Streets. The route would then follow along existing River Road to the west city line of North Tonawanda. The length of this portion would be 3.00 Miles.

The recommended road widths of this route would be as follows: 52 feet on the bridge approach, 60 feet north to the route's intersection with River Road, 56 feet northerly to Wheatfield Street and 44 feet from Wheatfield Street to the west city line.

In North Tonawanda there are several railroad spurs which service local industrial plants and which cross the arterial route. The consolidation and relocation of these tracks is included in the plan. This would minimize the number of railroad sidings crossing the arterial route.

SUPPLEMENTARY PLAN

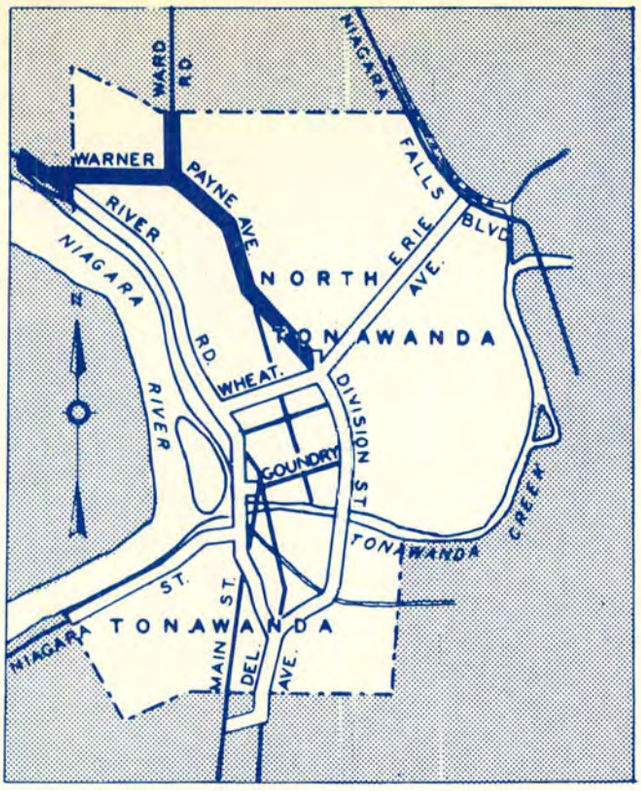
NIAGARA STREET THRUWAY CONNECTION
In City of Tonawanda



This planned route would provide a direct connection between the business districts of the Tonawandas and Route 266 which connects directly to the Niagara Thruway. The route would start at the west city line, extend northeasterly over existing Niagara Street and the cld Erie Canal right of way to connect with the Seymour-River Road Arterial Route. The present facility is corsidered adequate within the period of forecast.

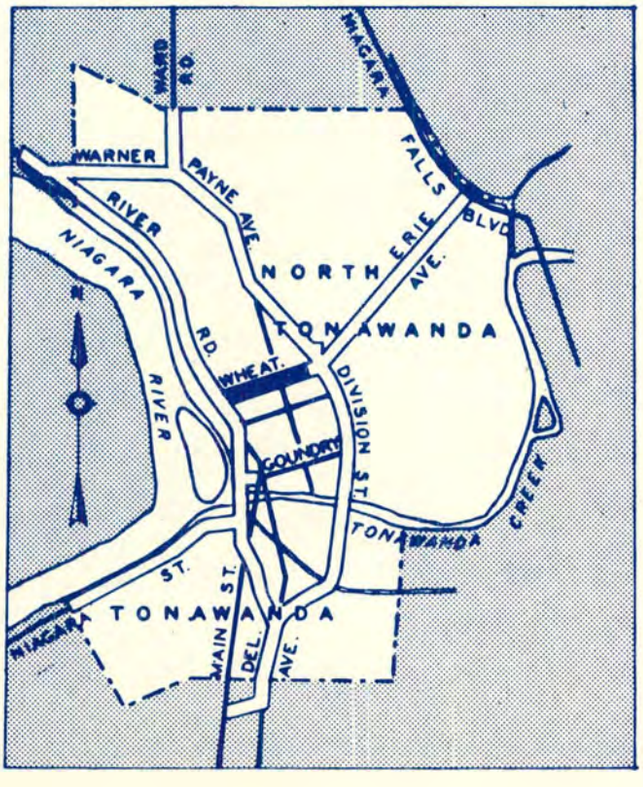
DIVISION-PAYNE AVENUE ARTERIAL ROUTE
In City of North Tonawanda

This route would start at Wheatfield Street, connecting to the Delaware-Division Street Arterial Route. It would extend northwesterly over the abandoned International Railway Company right of way and intersect Payne Avenue above East Street. From here the route would follow along existing Payne Avenue to the intersection of Ward Road and Warner Avenue, where it would swing westerly and continue along Warner Avenue and on new right of way to River Road at



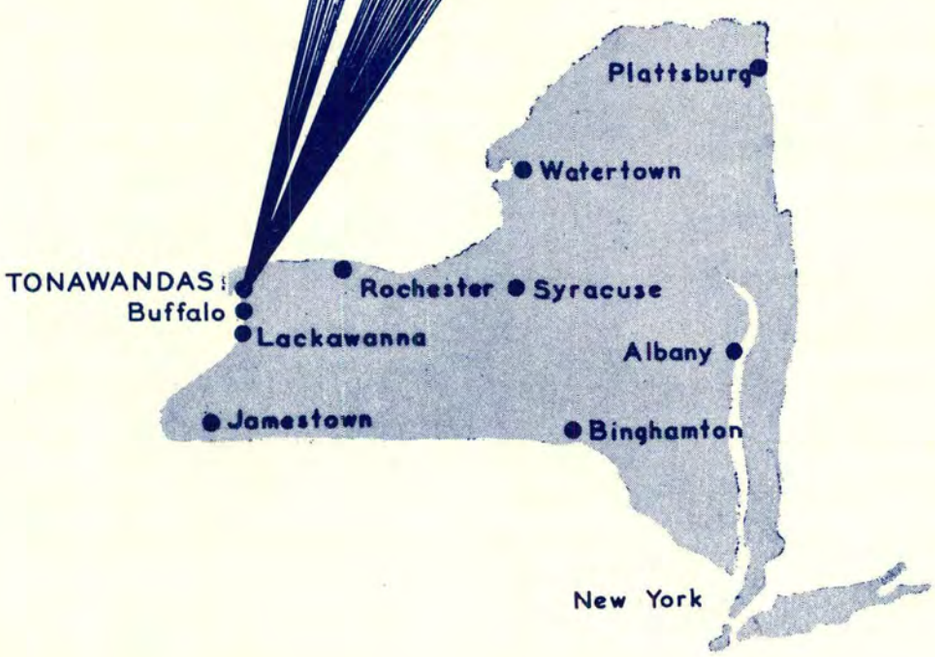
the west city line. The plan would also include a connection from Warner Avenue northerly along Ward Road to connect to Route 429 at the north city line. It is not planned to develop this route within the period of forecast.

WHEATFIELD STREET ARTERIAL
In City of North Tonawanda



Wheatfield Street has been included in the plan of arterial routes. It extends easterly from River Road along Wheatfield Street to Erie Avenue at the Delaware-Division Street Arterial Route. Only the realignment of the eastern end is included in this plan within the period of forecast.

THE REPORT



PURPOSE AND POLICY

New York State's urban arterial highway program has been actively under way since 1946. The basic purpose of this program is the scientific development of a master plan of arterial highway routes for each urban area of the State which, when constructed, will serve to expedite state highway travel into and through cities and to relieve major urban traffic congestion as well. The findings and recommendations of each study are presented in comprehensive report form to the authorities of the urban area concerned.

Following review and local acceptance of the plan or a mutually agreed modification thereof, specific designation of the recommended arterial routes may be incorporated in the Highway Law by legislative amendment. Upon official designation, specific arterial routes may be selected and advanced to project design and construction stage, to the extent which prevailing state highway funds, federal aid highway allocations, and local financial programs will permit.

Under the governing provisions of the Highway Law, the State assumes the costs of planning, design and recommended construction of approved arterial route projects within its cities, as well as fifty percent of the cost of right of way. Funds to cover the remaining one half of right of way costs are to be advanced by each city as individual projects are undertaken.

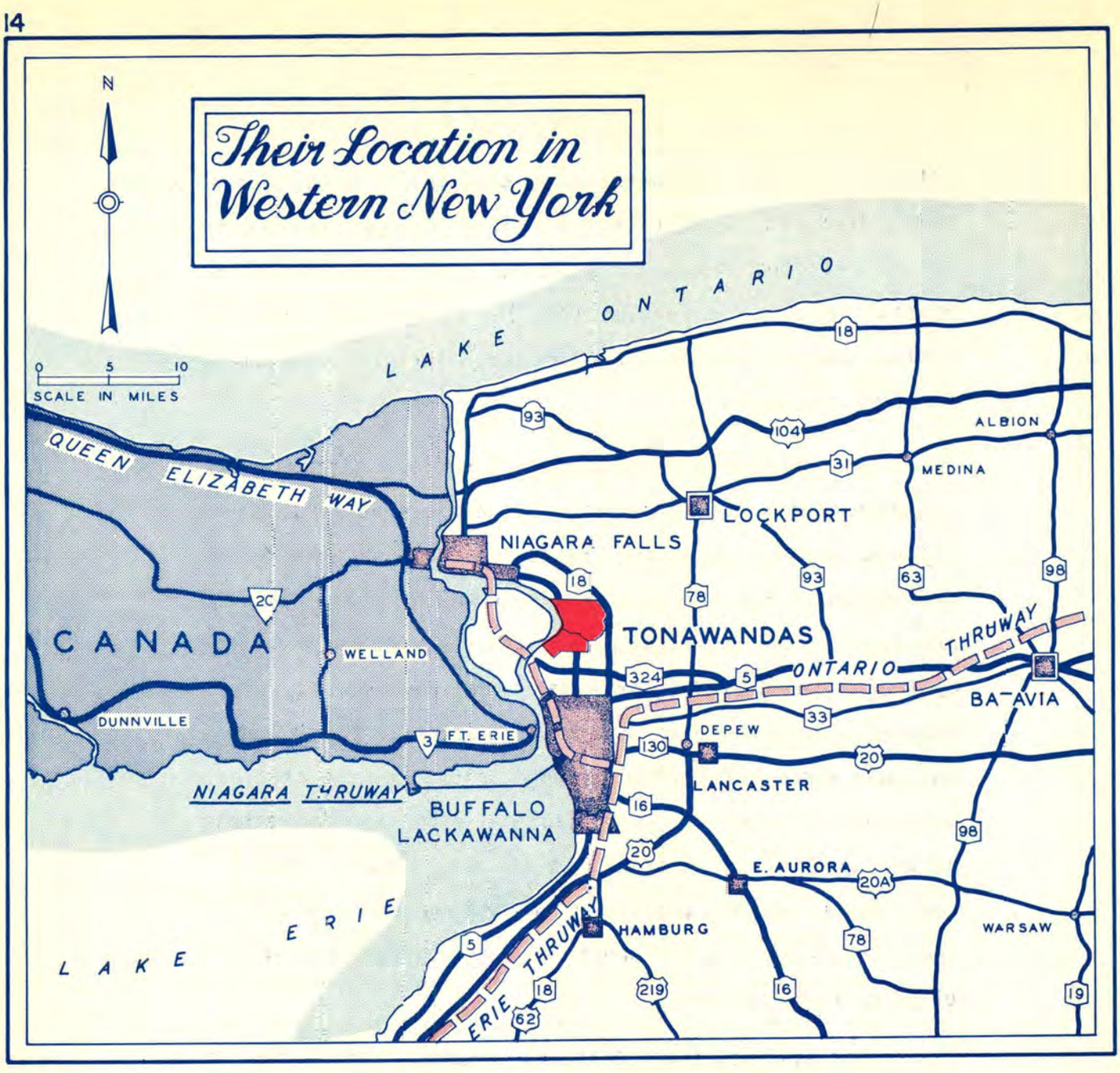
Local legislative approval of the master plan for

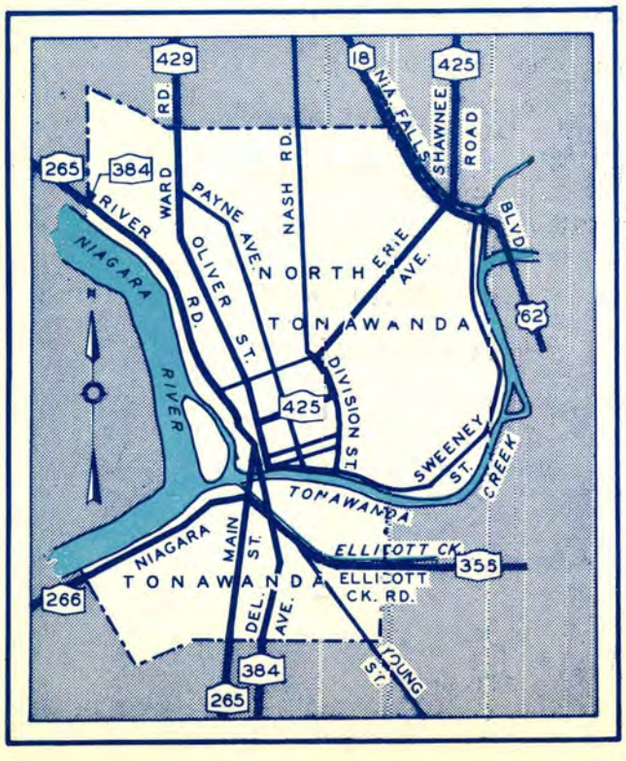
arterial routes as presented or as modified by mutual agreement, does not constitute a specific obligation of city funds. It does, however, indicate local approval of the general scope and arrangement of the recommended arterial system, and the procedures established for its advancement to final completion.

The planning of an arterial route system and its ultimate construction is certain to exert considerable influence on the future city pattern. For this reason the studies which are conducted by the Department give specific attention to the important phases of city planning which are most closely related to arterial route development. This process permits the development of an arterial system which, not only meets the traffic needs disclosed by the studies, but which is compatible with practical planning requirements as well. Official approval of the recommended arterial route system permits public and private enterprise to develop their undertakings in conformity with the established pattern of major thoroughfares.

Official approval of the recommended overall plan is requested from the city concerned before individual projects may be advanced. When the urban area plans are of material concern to the authorities of the county, towns and adjacent villages, these officials are invited to review the proposals and indicate their comments or approval.

In accordance with the general policies stated above, this report presents the plan which has been developed for the Cities of Tonawanda and North Tonawanda.





The Cities

REGIONAL AREA AND MAIN HIGHWAY SYSTEM THE TONAWANDAS

STATE OF NEW YORK
DEPARTMENT OF PUBLIC WORKS

THE TONAWANDAS URBAN AREA REPORT

CHARACTERISTICS OF THE TONAWANDAS URBAN AREA

The Cities of Tonawanda and North Tonawanda are located in the northwesterly part of New York State along the east branch of the Niagara River and lie midway between the cities of Buffalo and Niagara Falls. Known locally as the "Twin Cities", North Tonawanda is the larger of the two with a present population estimated at 24,000 as compared with 15,000 for Tonawanda. The two cities are separated by Tonawanda Creek and are interconnected by two highway bridges which carry traffic into and through their business districts. The dividing stream affords access to Lake Erie and forms a part of the New York State Canal which extends easterly to the Hudson River.

The clearing of the forests in the Great Lakes region during its early stages of development made this area one of the most important lumber centers in the country. Although a decline in the local lumber business has taken place it is still an important factor in the industrial life of the area. This decline has been more than compensated by the development of many diversified industries which were attracted by the excellent transportation facilities available and by the cheap and abundant power produced in the region. The expansion of the industries producing metal products, industrial machinery, iron and steel, chemicals and plastics, musical instruments and other goods has encouraged considerable immigration to the area.

Approximately 20 percent of the 14,000 workers employed in the local industrial plants live outside the Tonawandas. Conversely, many residents of the "Twin Cities" are employed in Buffalo and Niagara Falls. The daily flow of vehicles between the Tonawandas and these neighboring cities has an important influence on the local traffic pattern.

STREET LAYOUT

The street layout which has been somewhat determined by the shape of the Niagara River follows an irregular rectangular pattern with the north-south streets carrying the bulk of the cities' traffic. The cities' principal arteries of travel are State Highway Routes 265 and 384 which extend from Buffalo to Niagara Falls and pass through the heart of the cities' business districts. Niagara Falls Boulevard is a heavily traveled artery which carries traffic over State Highway Route 18 and U.S. Route 62 and which bypasses Tonawanda to the east but cuts through the sparsely inhabited northeasterly corner of North Tonawanda.

The Tonawandas are served by the New York Central Railroad (Niagara Falls Branch) and branch lines of the Erie and Pere Marquette Railroads which extend through the cities servicing the local industries with numerous spur tracks.

BASIC PLANNING DATA

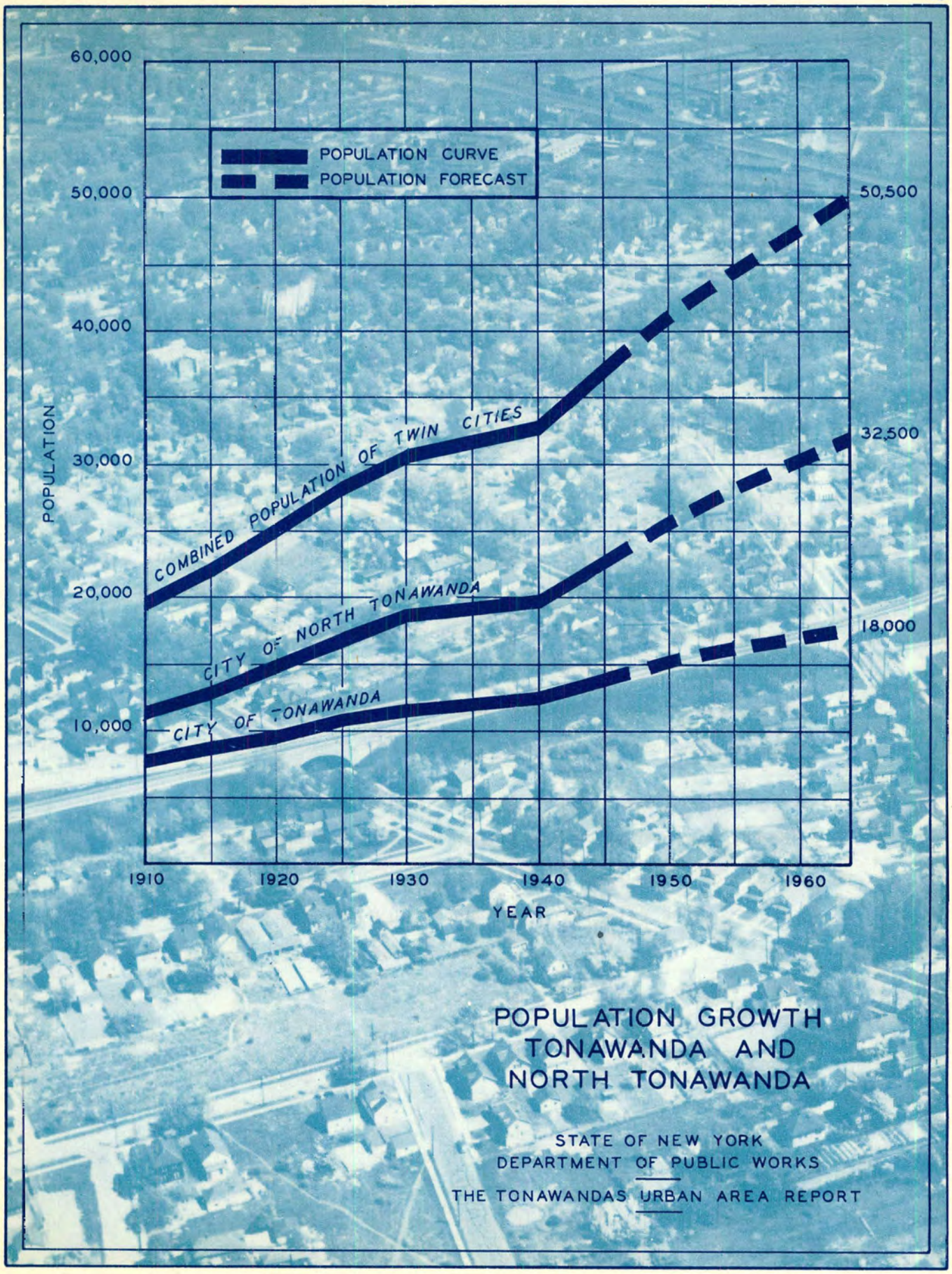
POPULATION GROWTH

Population increases and the development of new centers of residential, commercial and industrial use multiply traffic demands. These factors are of major importance and should be considered in the analysis of the Tonawandas transportation system.

The steady growth experienced in both cities in the past three decades has resulted in a population increase varying from 65 to 75 percent as illustrated on the accompanying plate. The upswing continued at a greater rate after 1940.

A favorable outlook for industrial and commercial expansion both in the Twin Cities and the Niagara Frontier for the next decade is predicted by area industrial leaders. It is estimated as this situation materializes, induced immigration coupled with natural population increases will sustain the rate of growth experienced in the forties.

It is estimated that the Twin Cities will reach a total population of 50,500 by 1963, an increase of 26 percent over 1948 figures.



POPULATION GROWTH TONAWANDA AND NORTH TONAWANDA

STATE OF NEW YORK
DEPARTMENT OF PUBLIC WORKS

THE TONAWANDAS URBAN AREA REPORT

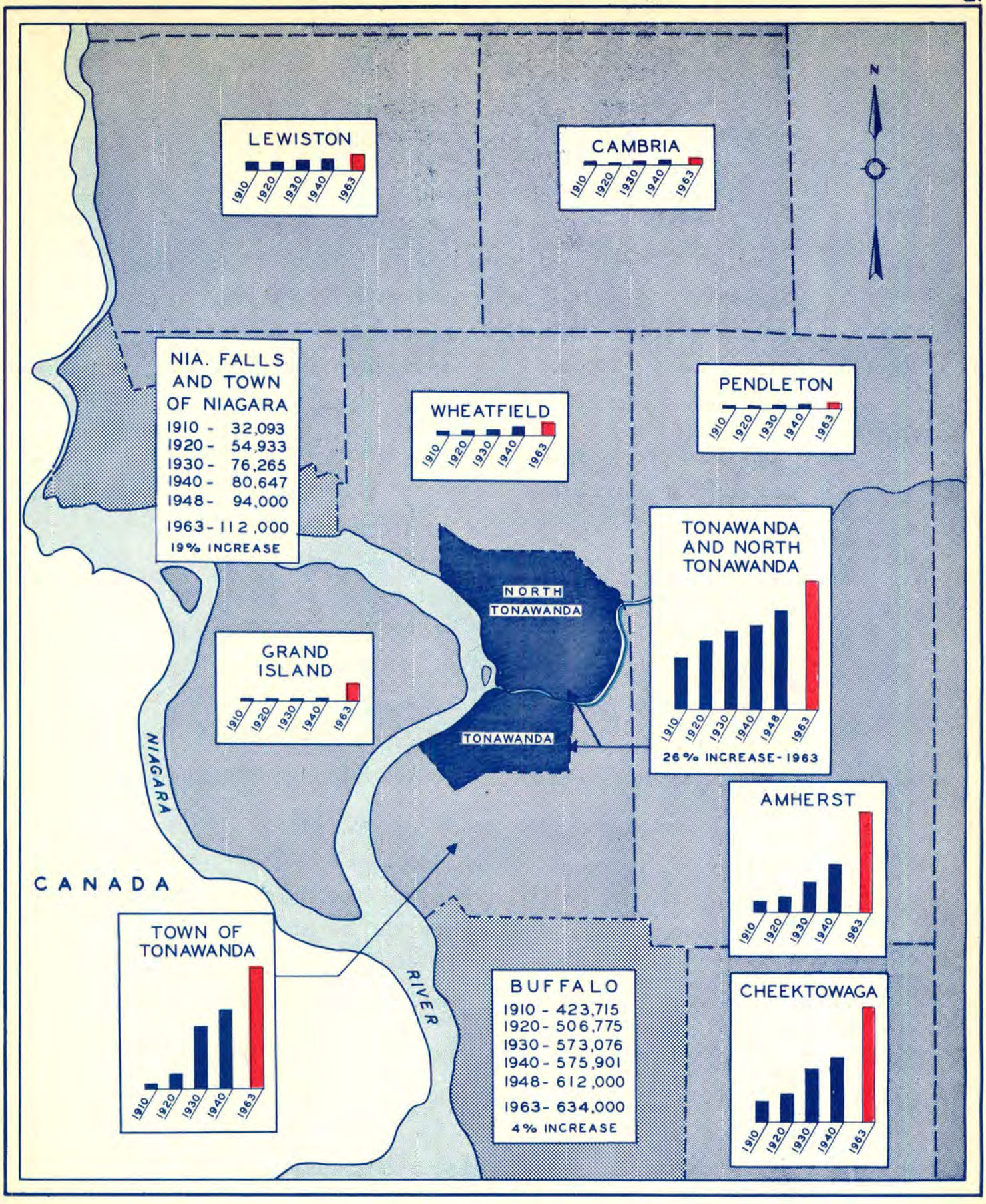
POPULATION TRENDS

The extent and geographic location of population growth in the northern half of the Niagara Frontier Metropolitan District is portrayed on the adjacent plate.

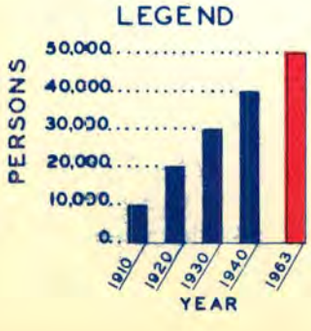
A comparatively sparse population exists in the towns of Niagara County to the north and east of North Tonawanda. Since these towns are largely agricultural, it is expected that their future growth will not be rapid, at least during the period of forecast.

In the Cities of Tonawanda and North Tonawanda, where important industrial enterprises are located, the greatest residential development has taken place. Substantial residential growths since 1910 have also occurred in the Towns of Cheektowaga, Amherst and Tonawanda adjacent to Buffalo and in the City of Niagara Falls. It is estimated that these areas will experience a continued growth as further industrial expansion takes place.

This predicted trend of development is an important basic factor in the design of urban arterial routes. As these growths occur, greater traffic volumes will concentrate on the existing interconnecting highways.



LEGEND



POPULATION TRENDS 1910 - 1963

STATE OF NEW YORK
DEPARTMENT OF PUBLIC WORKS

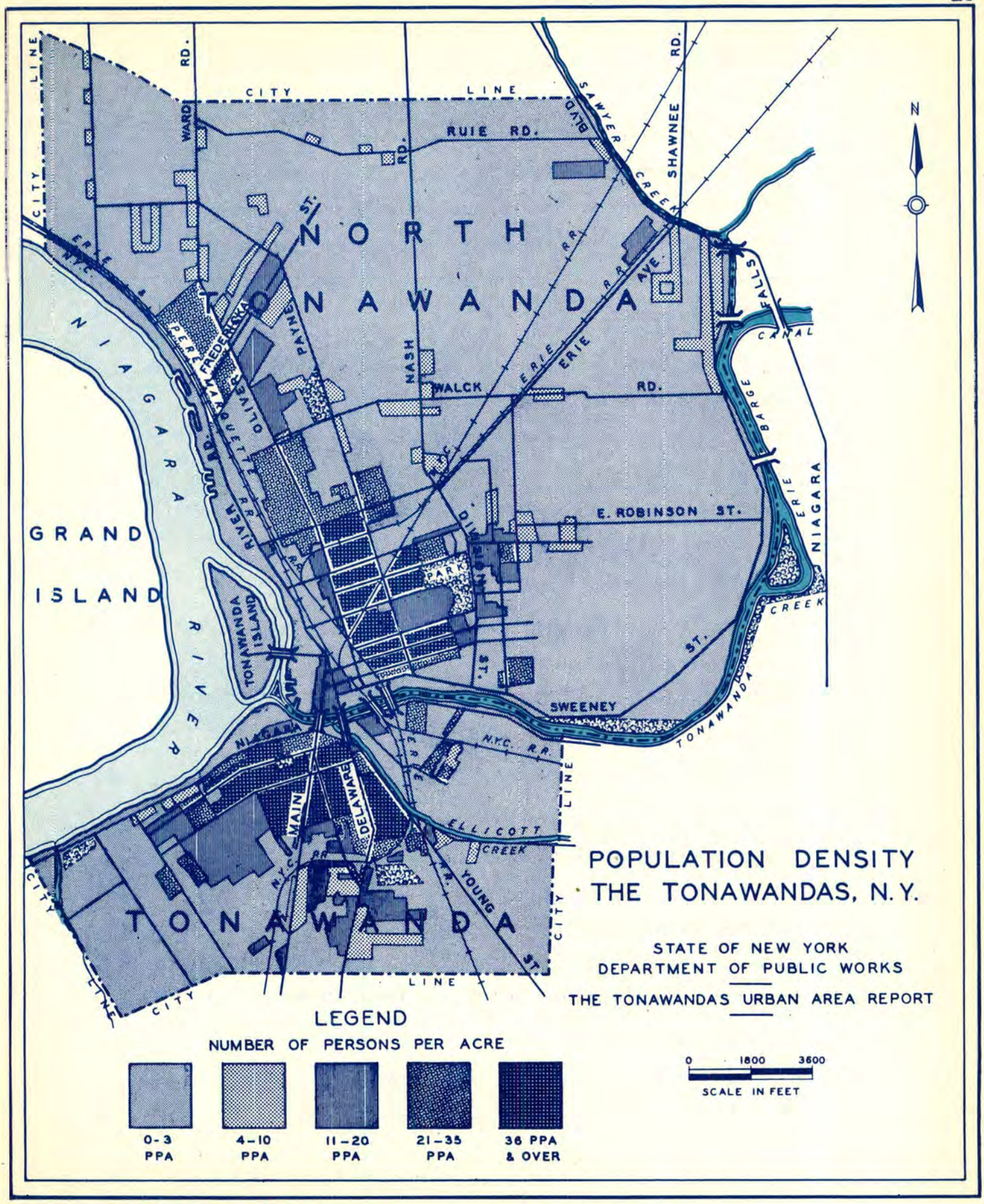
THE TONAWANDAS URBAN AREA REPORT

POPULATION DENSITY

Density of population has an important bearing on the local travel pattern and should be considered when planning an arterial route system in an urban area. The alignment of new routes should take full advantage of the use of unoccupied lands and yet should afford maximum benefit to the populated areas.

The accompanying plate portrays the present population distribution in the Cities of Tonawanda and North Tonawanda. The heavily populated areas are primarily located in the north central portion of Tonawanda and in the western portion of North Tonawanda. The subsequent spread of population followed a trend toward the south in Tonawanda and to the northwest in North Tonawanda. A study of the land use map reveals that there are large undeveloped tracts of land in both cities which may well be the location of new residential expansion as further development in these cities takes place.

The probable future population distribution and its relationship to industrial and commercial centers are controlling influences in establishing the location, extent and construction sequence of new traffic facilities.



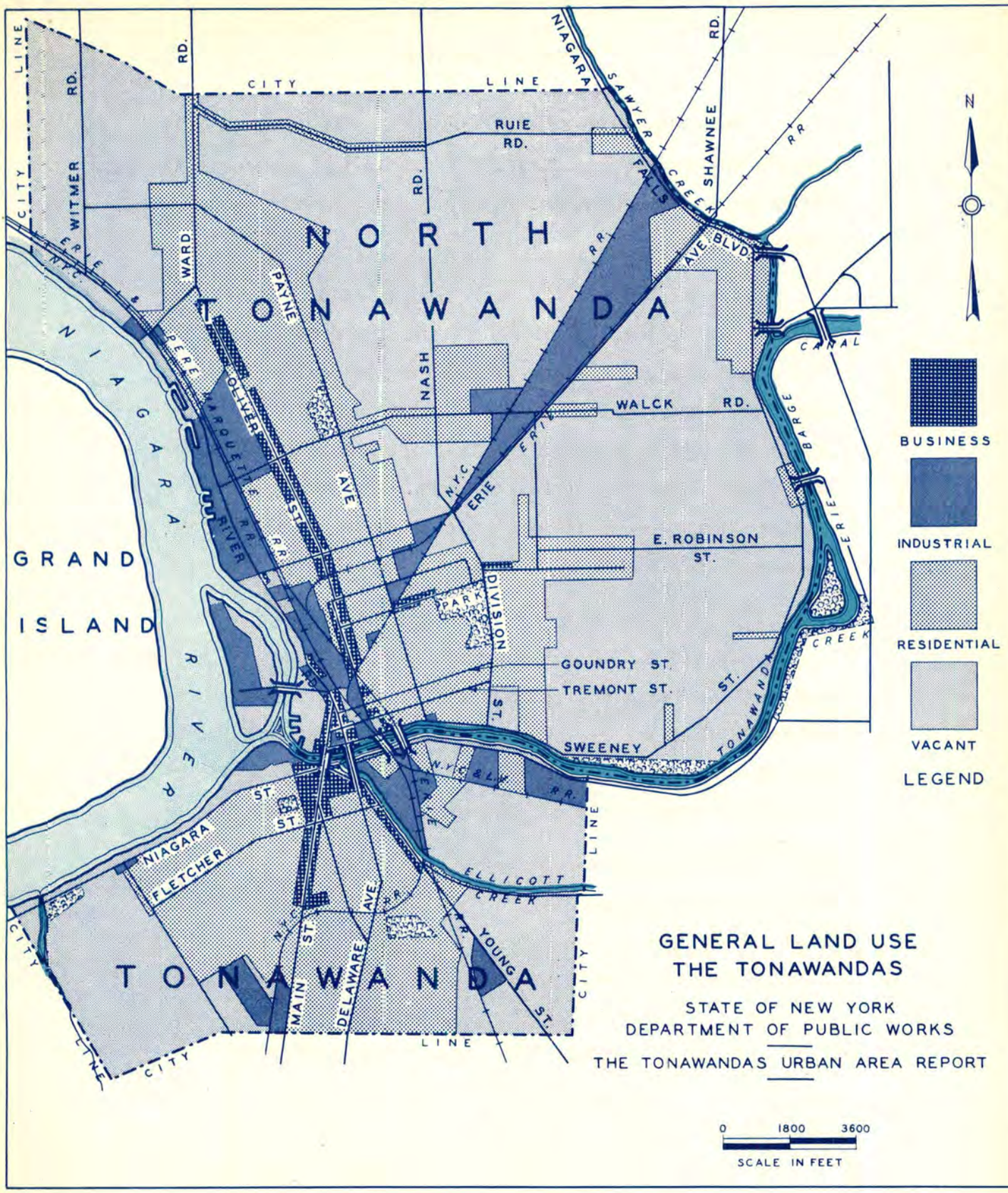
GENERAL LAND USE

The arrangement of existing land use and its possible future pattern are factors to be considered in the planning of arterial routes. The location of industrial, commercial and residential areas and their relationship to one another has an important bearing on the volume and direction of traffic movements.

The land use pattern in the Tonawandas is similar to that found in many industrial cities. Primary commercial establishments are located in the central district with strip developments extending outward along the major traveled arteries which serve as access streets to the surrounding residential areas. Industrial use is confined in the areas adjacent to existing railroads and waterways.

The older residential areas, contiguous to the central district, are highly developed. However, there is a considerable amount of available land within the corporate limits of both cities where small residential developments have taken place.

As the steady growth of the communities continues, these widely separated residential subdivisions will gradually merge into an integrated whole, a process which already has progressed somewhat during the postwar period. Adequate traffic facilities will become more important as traffic volumes increase to and from these areas.



GENERAL LAND USE
THE TONAWANDAS

STATE OF NEW YORK
DEPARTMENT OF PUBLIC WORKS

THE TONAWANDAS URBAN AREA REPORT

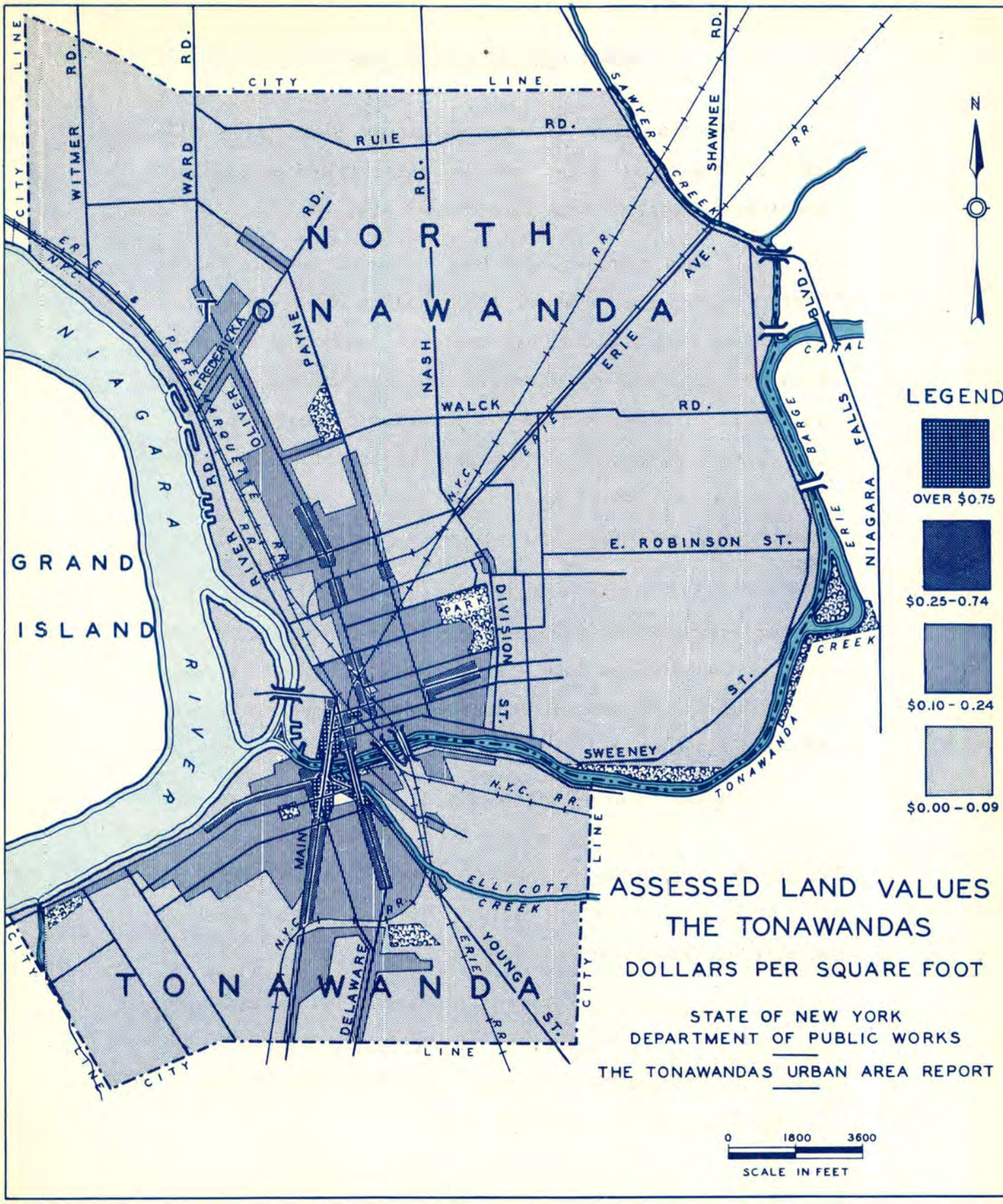
0 1800 3600
SCALE IN FEET

ASSESSED LAND VALUES

Desirable property, particularly that which is primarily commercial in character has attained and held its value because of its accessibility to transportation facilities.

The adjacent plate portrays the relative assessed land values in the Cities of Tonawanda and North Tonawanda. The areas of high value lie in or near the central business districts and along such principal commercial strip developments as along Main Street and Delaware Avenue in Tonawanda and Oliver Street in North Tonawanda. The extensive residential areas are in the next order of value followed by the industrial sites adjacent to the railroads.

To afford maximum benefit to a community, the planned routes should be located so as to service lands of high value since these are usually the heaviest generators of traffic. However, right of way cost is an important factor and savings which can be effected by locating arteries of travel through lands of low value must necessarily be considered.



MOTOR VEHICLE REGISTRATION

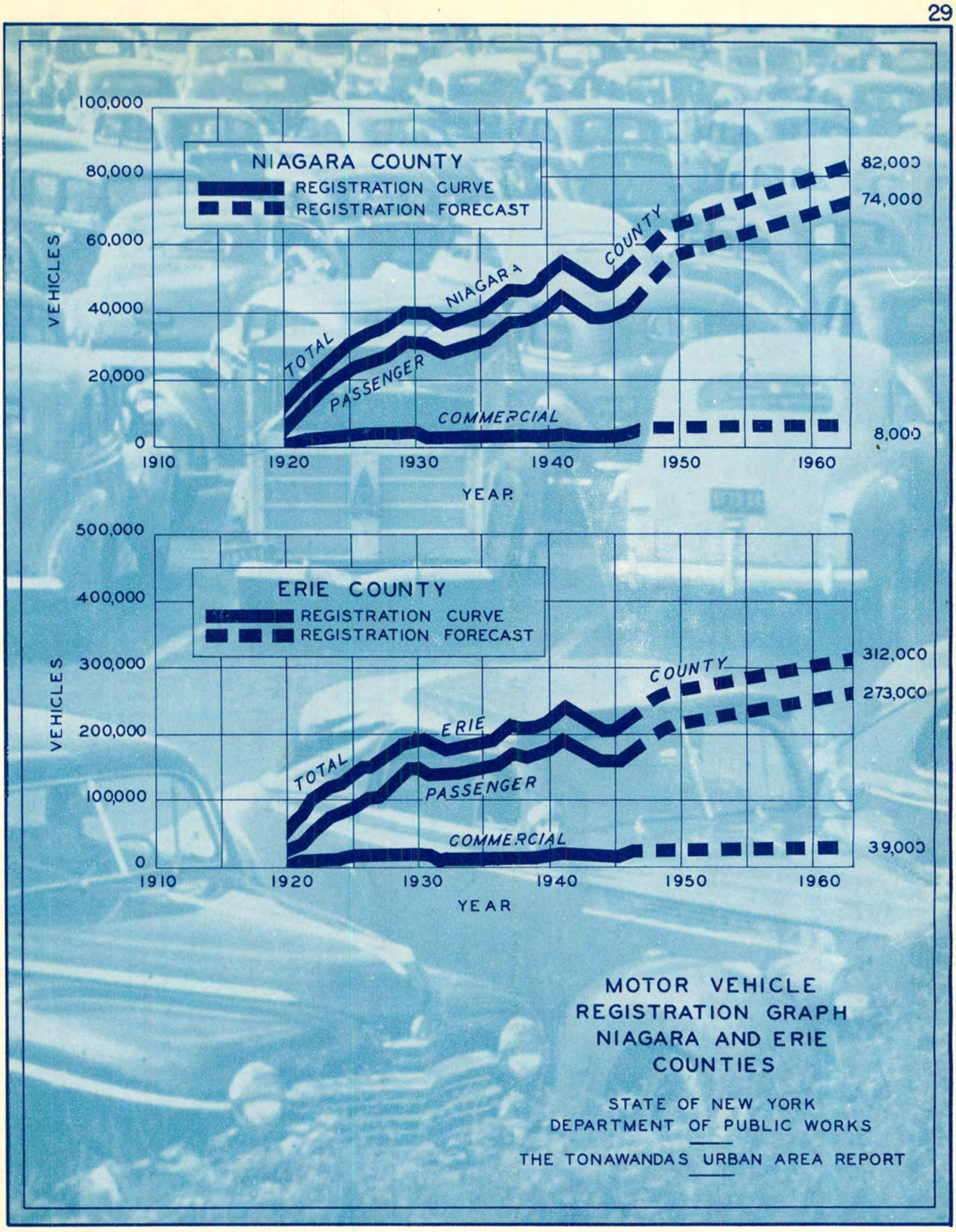
The information on the accompanying plate graphically portrays the annual motor vehicle registrations within Erie and Niagara Counties from 1920 through 1948.

In both counties, the loss in annual vehicle registration during the World War II era, which was brought about by driving restrictions, has now been completely overcome, with 1948 registrations exceeding the previous peaks reached in 1941. This upward trend is expected to continue until the current demand for motor vehicles is satisfied. When this equalization of supply and demand materializes a leveling off period may be expected.

In Niagara County, it is estimated that in 1963 annual registration will reach a figure of about 82,000 vehicles and in Erie County about 312,000. This will mean an increase of 37 percent and 25 percent respectively over the 1948 figures.

However, a study of population trends indicates that the heaviest population growth for Erie County is expected in the towns of Amherst, Cheektowaga and in the vicinity of Tonawanda where a vehicle registration increase of about 40 percent may be expected.

An analysis of pertinent traffic information affecting the Twin Cities indicates that a figure of 40 percent may be considered a reasonable basis for a forecast to 1963 of present day traffic data.



MOTOR VEHICLE REGISTRATION GRAPH NIAGARA AND ERIE COUNTIES

STATE OF NEW YORK
DEPARTMENT OF PUBLIC WORKS

THE TONAWANDAS URBAN AREA REPORT

THE TRAFFIC SURVEY

DESCRIPTION OF THE SURVEY

The comprehensive traffic survey conducted in the Tonawanda urban area by the Department consisted of three general parts, a volume census, an origin and destination survey and a speed and delay study.

VOLUME CENSUS

The twelve hour traffic census, which followed the standard procedure used previously in other cities of the state, was conducted on August 24, 1948. The type and volumes of vehicles traveling in each direction on the major streets were recorded at 25 key stations between the hours of 6:30 A.M. and 6:30 P.M. Two hour supplementary counts were also taken at eight additional stations.

ORIGIN AND DESTINATION SURVEY

An origin and destination survey was also conducted on August 24, 1948 to determine the travel habits of the motorists in the Tonawanda area. Stations were established on every major street and highway entering the cities to form an outer cordon. An inner cordon of stations was also set up surrounding the central business district. The cordon stations were identical to the key volume stations.

Traffic at the 25 key stations was controlled by the Erie and Niagara County Deputy Sheriffs and the city police of both cities. During the twelve hour survey period from 6:30 A.M. to 6:30 P.M. over 17,000 questionnaire cards were distributed to motorists by 31 New York State employees.

Returns were obtained from 36% of the cards handed out. They were then coded to indicate the origin and destination of each trip and tabulated to obtain the origin and destination data presented in this report.

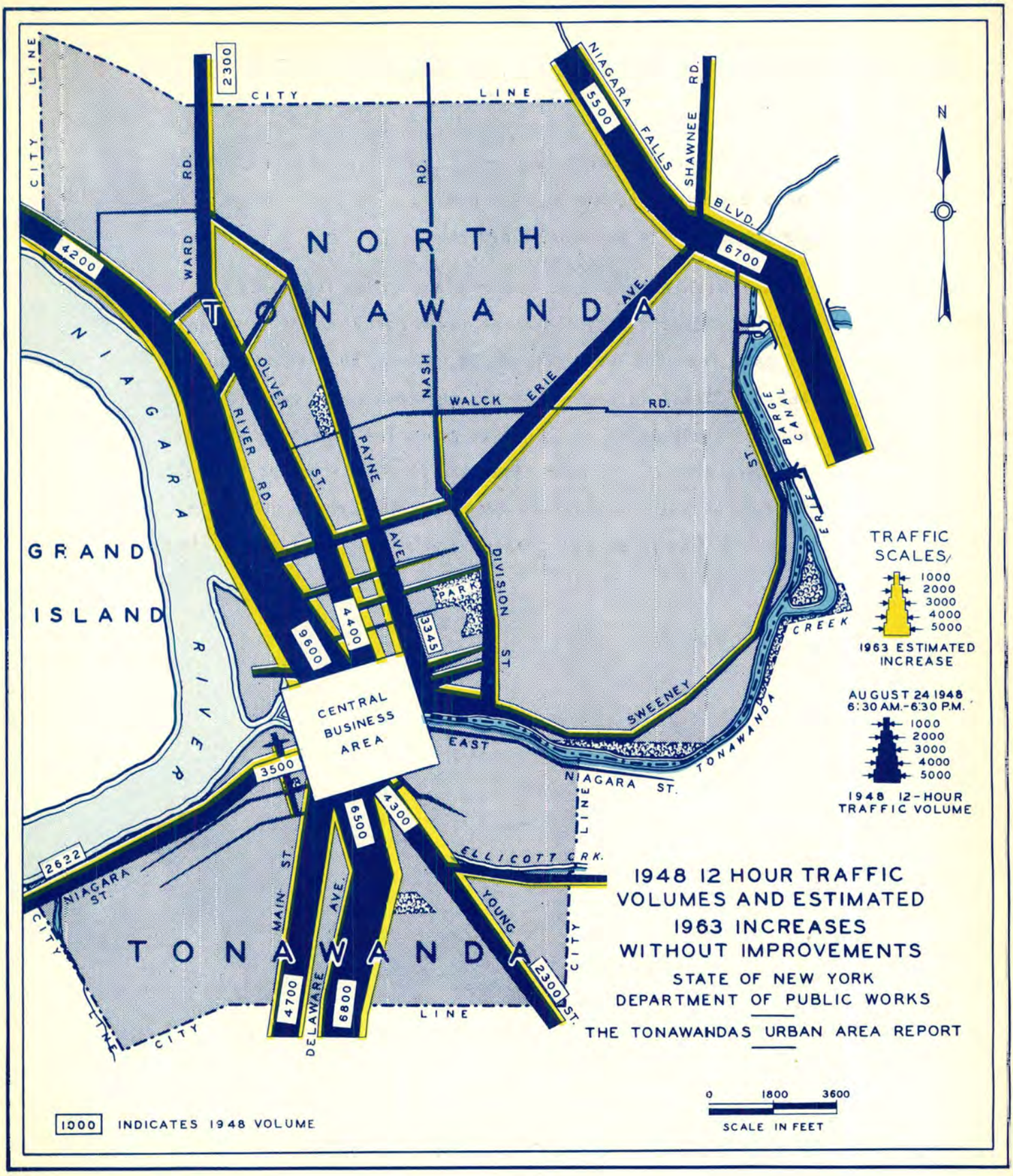
SPEED AND DELAY STUDY

A vehicle speed and delay study forms another important part of the complete traffic survey. This field investigation, made by driving during peak hour traffic flows and recording total running time between designated points together with the length and causes of delay enroute, is designed to determine the cause of congestion of major streets and to establish the overall elapsed travel time between points of origin and destination. When related to existing street capacities and future estimated volumes, speed and delay data supply additional basic information needed for the design of the arterial routes. They also serve as a measure of the planned efficiency of the designed routes by demonstrating the saving in travel time which will be possible following the construction of the new route system.

1948 12-HOUR TRAFFIC VOLUMES AND ESTIMATED 1963 INCREASES WITHOUT IMPROVEMENTS

The traffic volumes recorded on the principal streets of the Tonawandas in 1948 are indicated to scale on the accompanying plate by dark bands of varying width. The portion of the band shown in yellow is the estimated increase of volume expected by 1963. Volumes recorded during the survey are indicated numerically at various important locations. Estimated increases are based on a study of population and motor vehicle registration trends throughout the Niagara Frontier area.

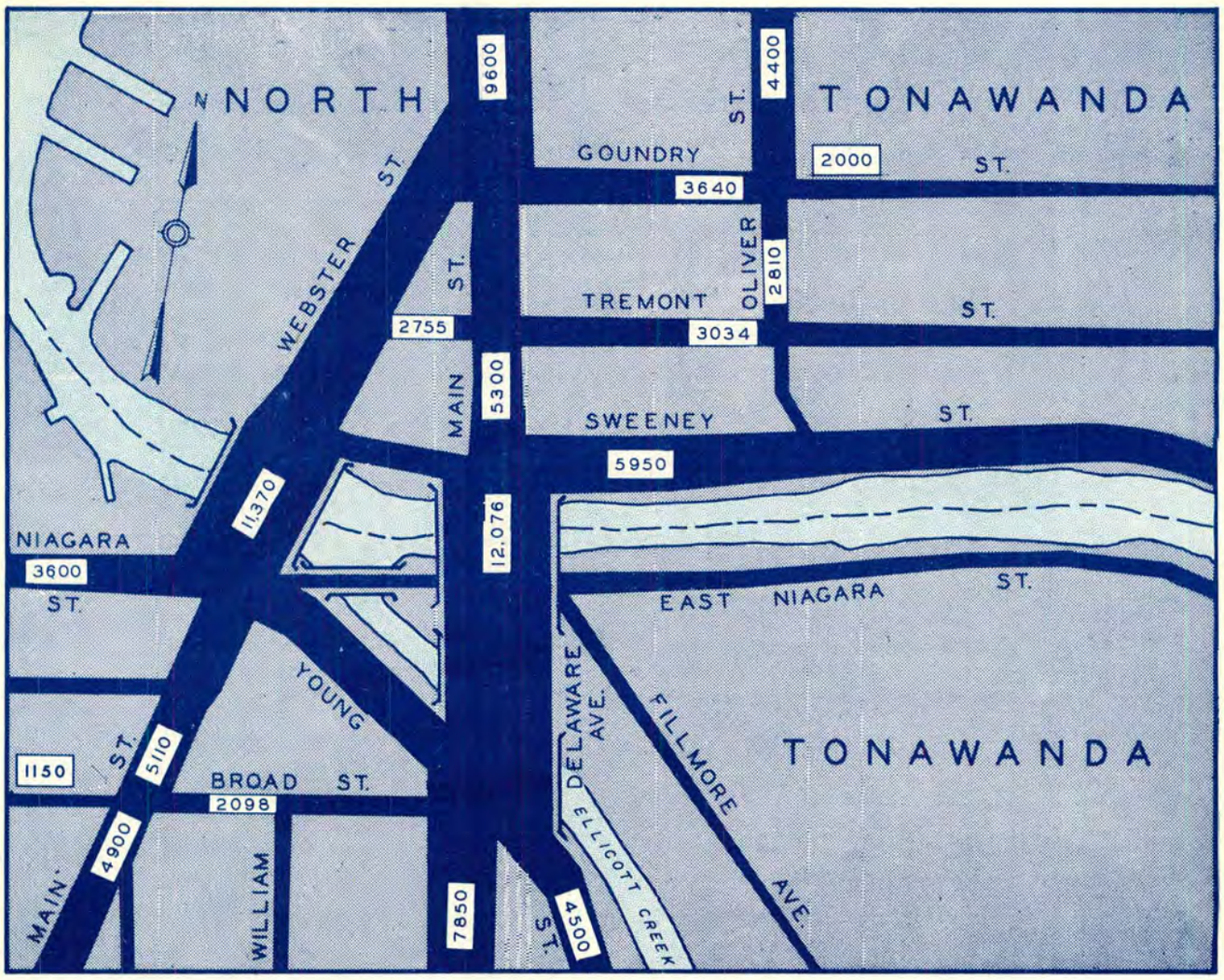
The plate illustrates the present heavy flow of traffic on the major routes leading into the central business areas where they converge on the Webster Street and Delaware Avenue bridges crossing Tonawanda Creek. Delaware Avenue in Tonawanda and River Road in North Tonawanda are the most heavily traveled streets traversing the two cities. A substartial volume is also indicated on Niagara Falls Boulevard along the northeastern limits of North Tonawanda.



1948 TRAFFIC VOLUMES
CENTRAL BUSINESS AREA

The 1948 traffic volumes traveling within the business areas of the two cities during a 12-hour period are portrayed on the accompanying plate.

Within this area two bridges cross Tonawanda Creek leading into the business zones, each carrying heavy volumes of cars from the north and south. When the lift bridge on Webster Street is open to permit the passage of canal boats, most of the traffic is forced to cross the remaining span at Delaware Avenue. At such times the concentration of traffic on Main Street and Delaware Avenue at the approaches to the Delaware Avenue Bridge creates serious congestion in the area.



VEHICLES

TRAFFIC SCALE

1000
2000
3000
4000
5000

1948 TRAFFIC VOLUMES
CENTRAL BUSINESS AREA
THE TONAWANDAS
12 HOURS 6:30 A.M.- 6:30 P.M.
AUGUST 24, 1948

STATE OF NEW YORK
DEPARTMENT OF PUBLIC WORKS

THE TONAWANDAS URBAN AREA REPORT

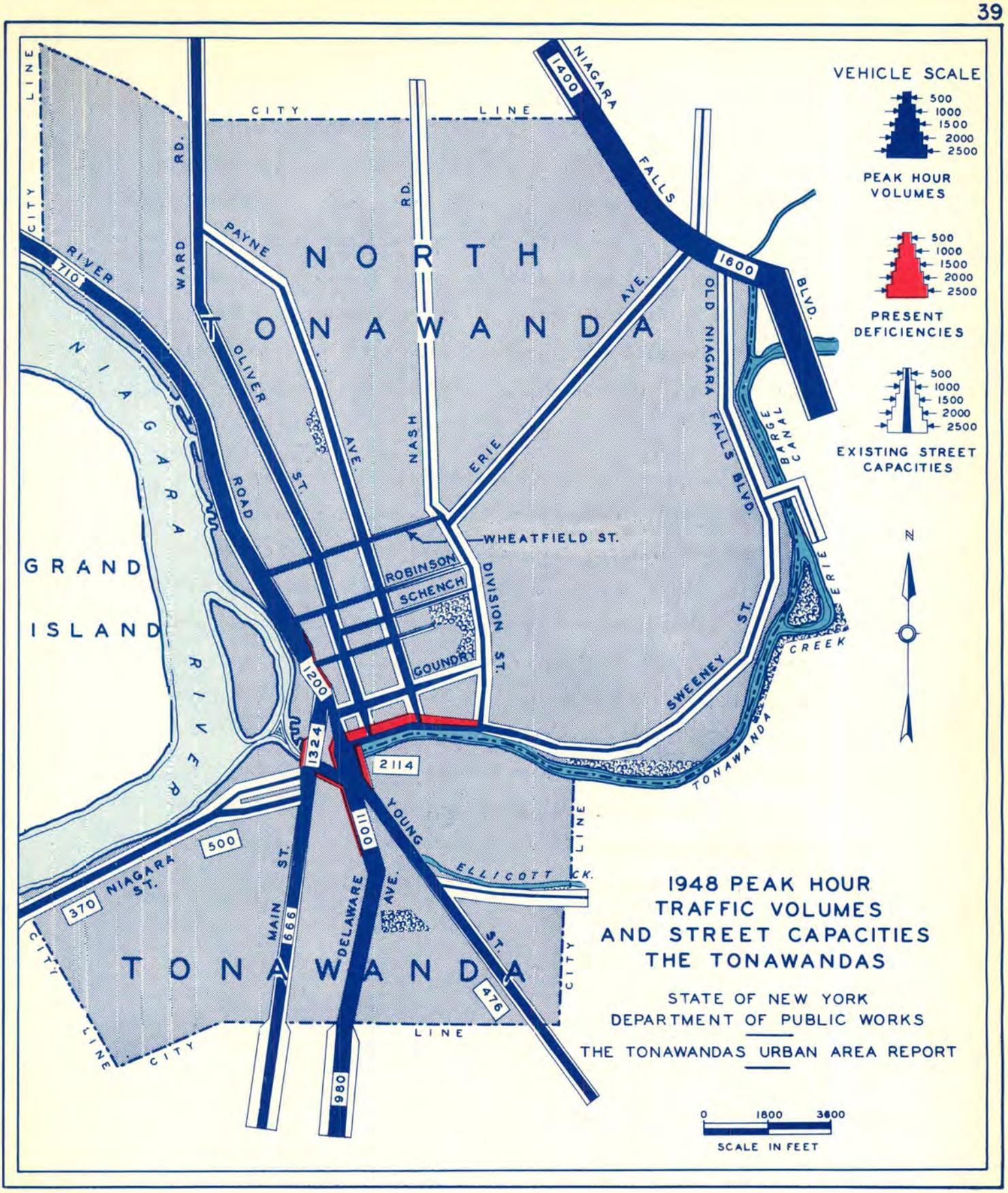
1948 PEAK HOUR TRAFFIC VOLUMES AND STREET CAPACITIES

The peak hour volume count is used as a measure to determine the capacity or lack of capacity of the existing major streets. The analysis of the conditions affecting free flowing traffic discloses the location and extent of present deficiencies.

The street capacity is based upon the free travel lanes available after deducting from the total pavement width the area set aside for parking.

The accompanying plate portrays the present two-way peak hour volumes in relation to present street capacities. Where added street capacity is needed to carry the present peak hour load the additional requirement is shown in red. Where the peak hour volumes are less than the available street capacity, the unused capacity is shown by the white band.

The Delaware Avenue Bridge and the Main-Webster Street Bridge show a peak hour volume in excess of the lane carrying capacity of the bridges. Similarly, heavy volumes overload the major routes converging upon these bridges, notably Delaware Avenue, River Road and Sweeney Street. The plate also shows that Niagara Falls Boulevard within the City of North Tonawanda is approaching the limits of its capacity during peak periods.



1948 PEAK HOUR TRAFFIC VOLUMES AND STREET CAPACITIES THE TONAWANDAS

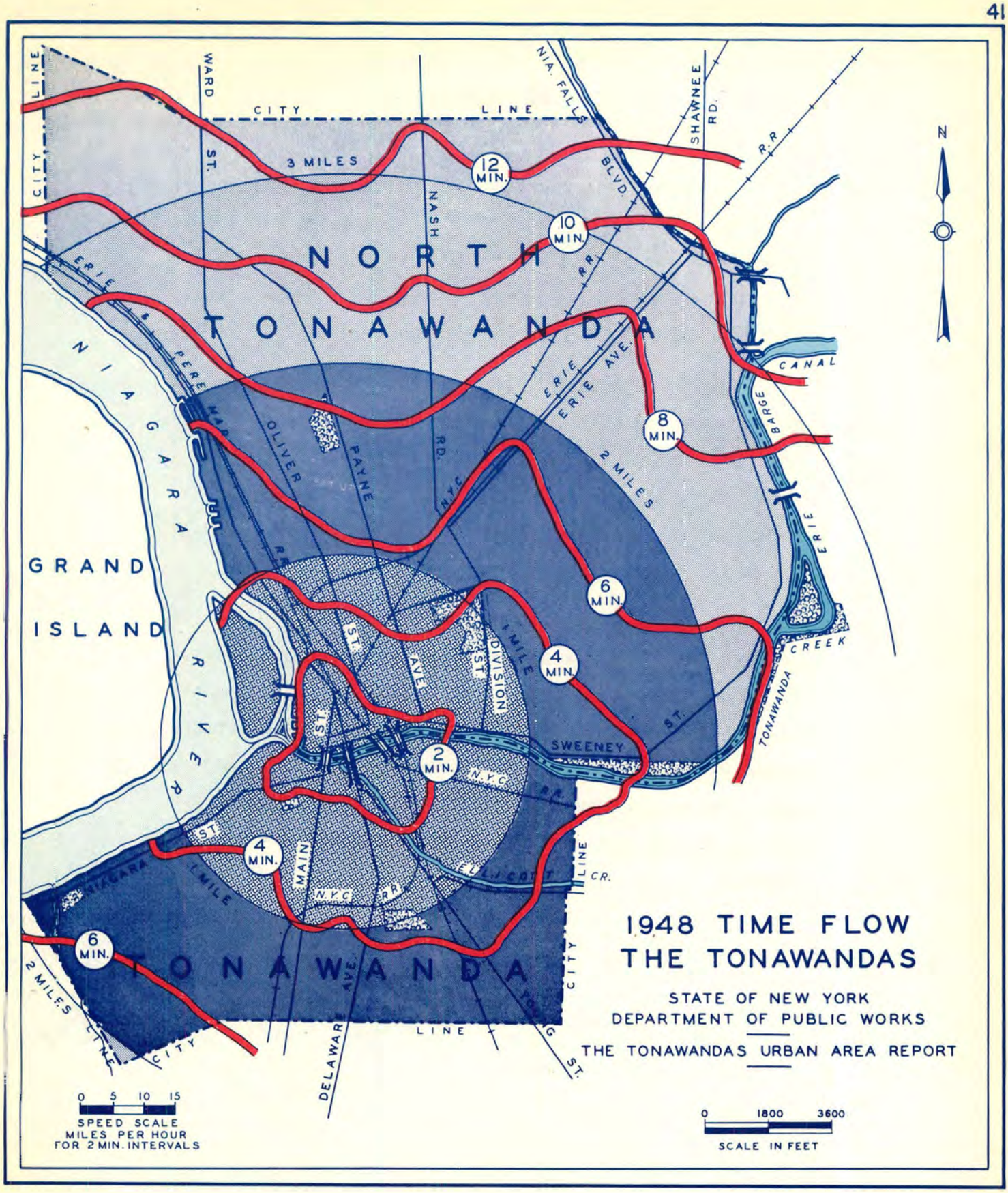
STATE OF NEW YORK
DEPARTMENT OF PUBLIC WORKS

THE TONAWANDAS URBAN AREA REPORT

1948 TIME FLOW

The accompanying plate is a graphic picture of the space time relationship existing under peak hour traffic conditions. It illustrates the time required to drive from the central intersection of Delaware Avenue and Sweeney Street in North Tonawanda to various points along the major routes. The data for this chart were obtained from actual runs made over the routes during periods of peak hour traffic flow.

The time losses which affect the efficiency of all forms of transportation were found to be more prevalent in the central business district. Here the heavy volumes of traffic, the slowing effect caused by the heavy concentration of vehicles on the bridge approaches, diagonal and double parking, loading and unloading of trucks are the principal factors of delay. On Delaware Avenue and Main Street within the Tonawanda business district, the average travel speed was found to be between 6 and 8 miles per hour. In North Tonawanda travel speeds between 12 and 15 miles per hour were attained on River Road in the business area and on Sweeney Street from Main to Payne Avenue.



1948 TIME FLOW THE TONAWANDAS

STATE OF NEW YORK
DEPARTMENT OF PUBLIC WORKS

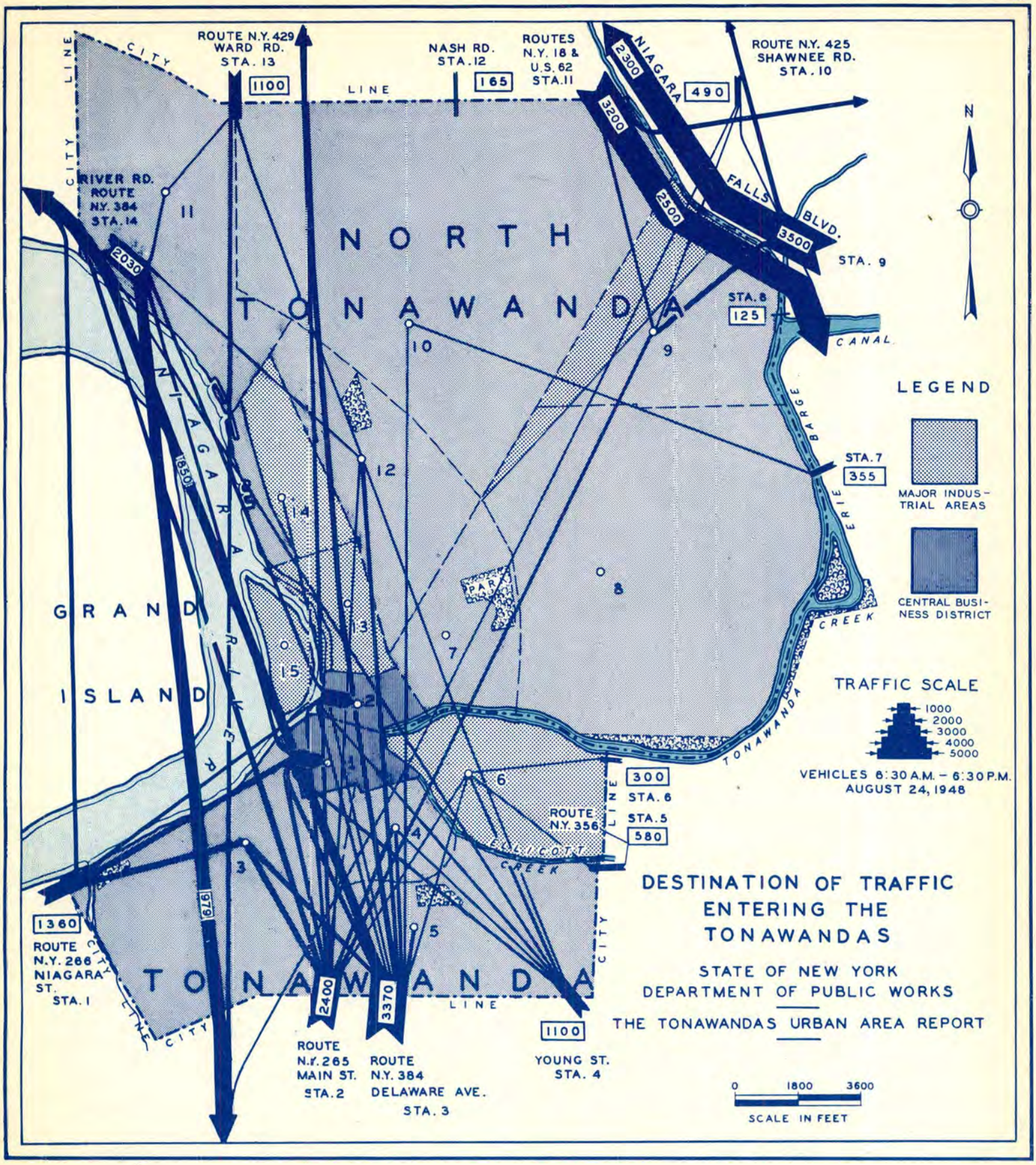
THE TONAWANDAS URBAN AREA REPORT

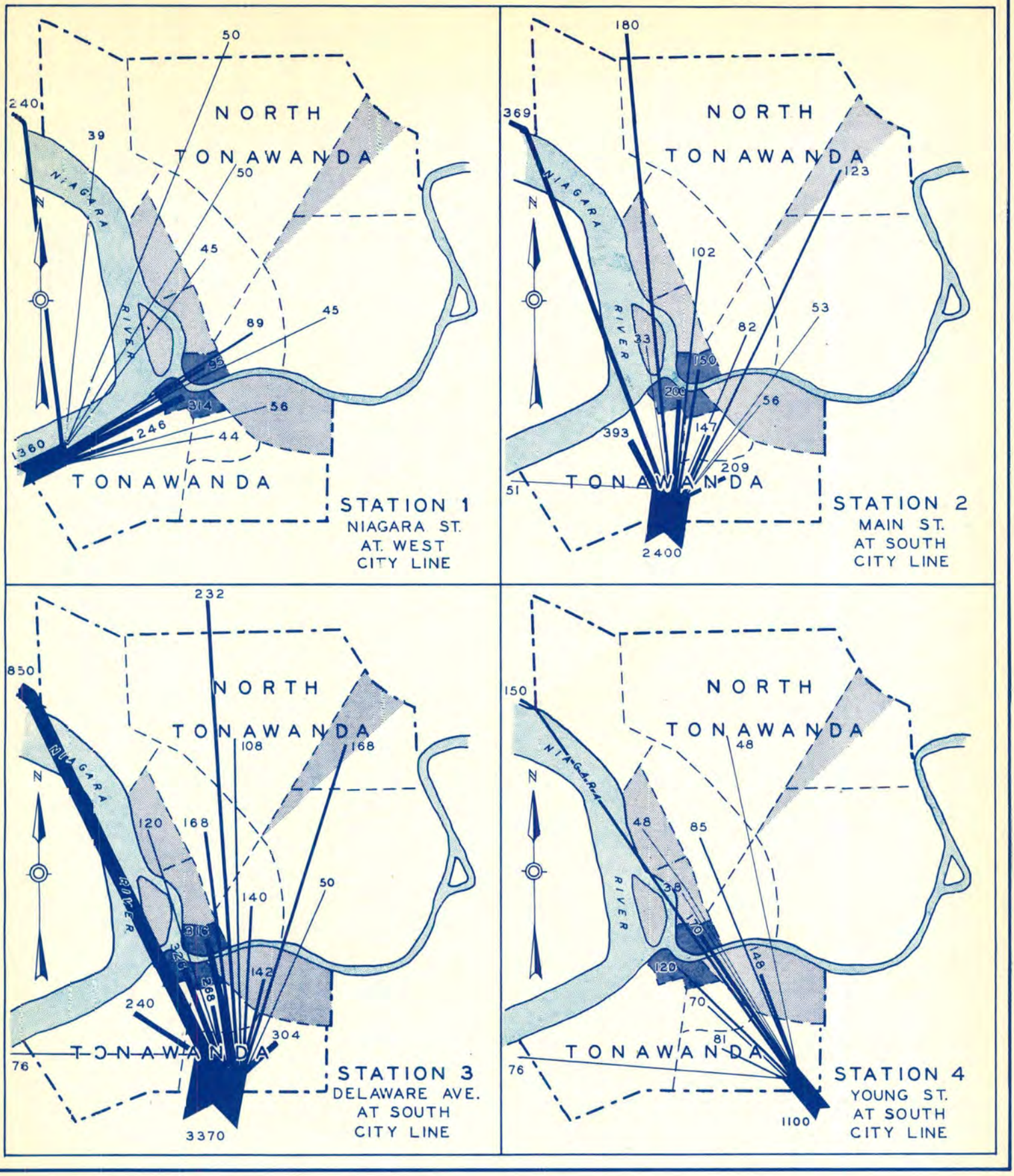
DESTINATION OF TRAFFIC ENTERING THE TONAWANDAS

A composite picture of the destination of external traffic entering the cities through the outer cordons is shown on the adjacent plate. The three plates which follow illustrate a more detailed origin and destination of vehicles from each of the individual cordon stations.

The largest vehicle volumes entering the city are on Main Street and Delaware Avenue from the south, on River Road from the northwest, and on Niagara Falls Boulevard which skirts the northeastern edge of North Tonawanda. The predominant traffic movement from the south is occasioned by the adjoining heavily populated Buffalo area.

The greater part of the traffic entering the cities is either destined for points beyond the municipalities or for areas outside the central business districts. In this respect, the traffic pattern in the Tonawandas differs somewhat from that found in the average urban area, a fact which may be attributed to the location of the Tonawandas midway between the larger cities of Buffalo and Niagara Falls.





VEHICLES 6:30 A.M. - 6:30 P.M.
AUGUST 24, 1948

TRAFFIC SCALE
500
1000
1500
2000
2500

VOLUMES LESS THAN
30 VEHICLES NOT SHOWN

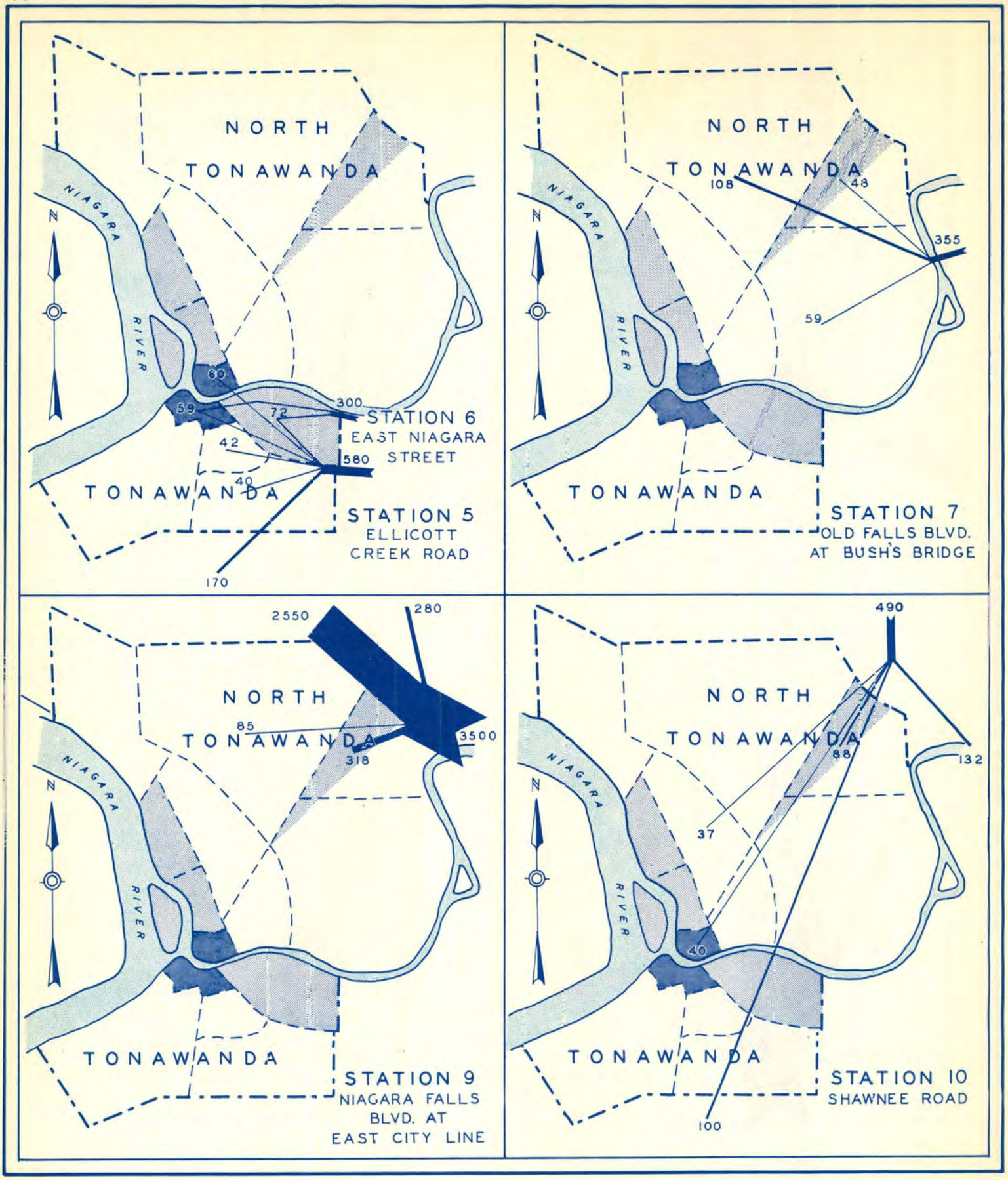
CENTRAL BUSINESS AREA
INDUSTRIAL SECTOR

INDIVIDUAL OUTER CORDON STATION DIAGRAMS

SHOWING DESTINATION OF TRAFFIC ENTERING THE TONAWANDAS

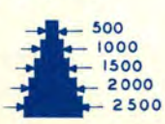
STATE OF NEW YORK
DEPARTMENT OF PUBLIC WORKS

THE TONAWANDAS URBAN AREA REPORT



VEHICLES 6:30 A.M. - 6:30 P.M.
AUGUST 24, 1948

TRAFFIC SCALE



VOLUMES LESS THAN 30 VEHICLES NOT SHOWN

CENTRAL BUSINESS AREA

INDUSTRIAL SECTOR

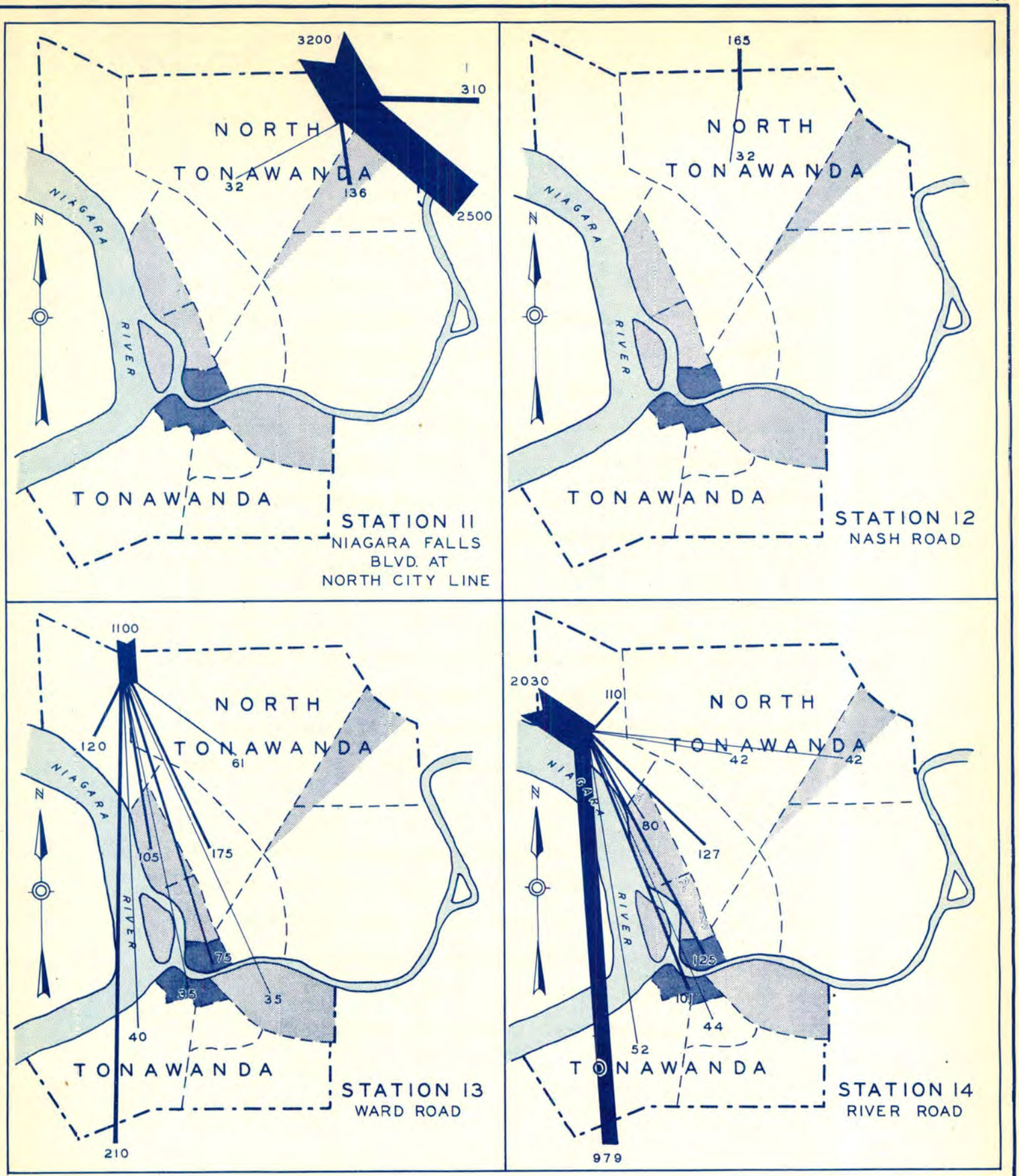
NOTE: STATION 8 OMITTED DUE TO NEGLIGIBLE TRAFFIC VOLUME.

INDIVIDUAL OUTER CORDON STATION DIAGRAMS

SHOWING DESTINATION OF TRAFFIC ENTERING THE TONAWANDAS

STATE OF NEW YORK
DEPARTMENT OF PUBLIC WORKS

THE TONAWANDAS URBAN AREA REPORT



VEHICLES 6:30 A.M. - 6:30 P.M.
AUGUST 24, 1948

TRAFFIC SCALE
500
1000
1500
2000
2500

VOLUMES LESS THAN
30 VEHICLES NOT SHOWN

CENTRAL BUSINESS AREA
INDUSTRIAL SECTOR

INDIVIDUAL OUTER CORDON STATION DIAGRAMS

SHOWING DESTINATION OF TRAFFIC ENTERING THE TONAWANDAS

STATE OF NEW YORK
DEPARTMENT OF PUBLIC WORKS

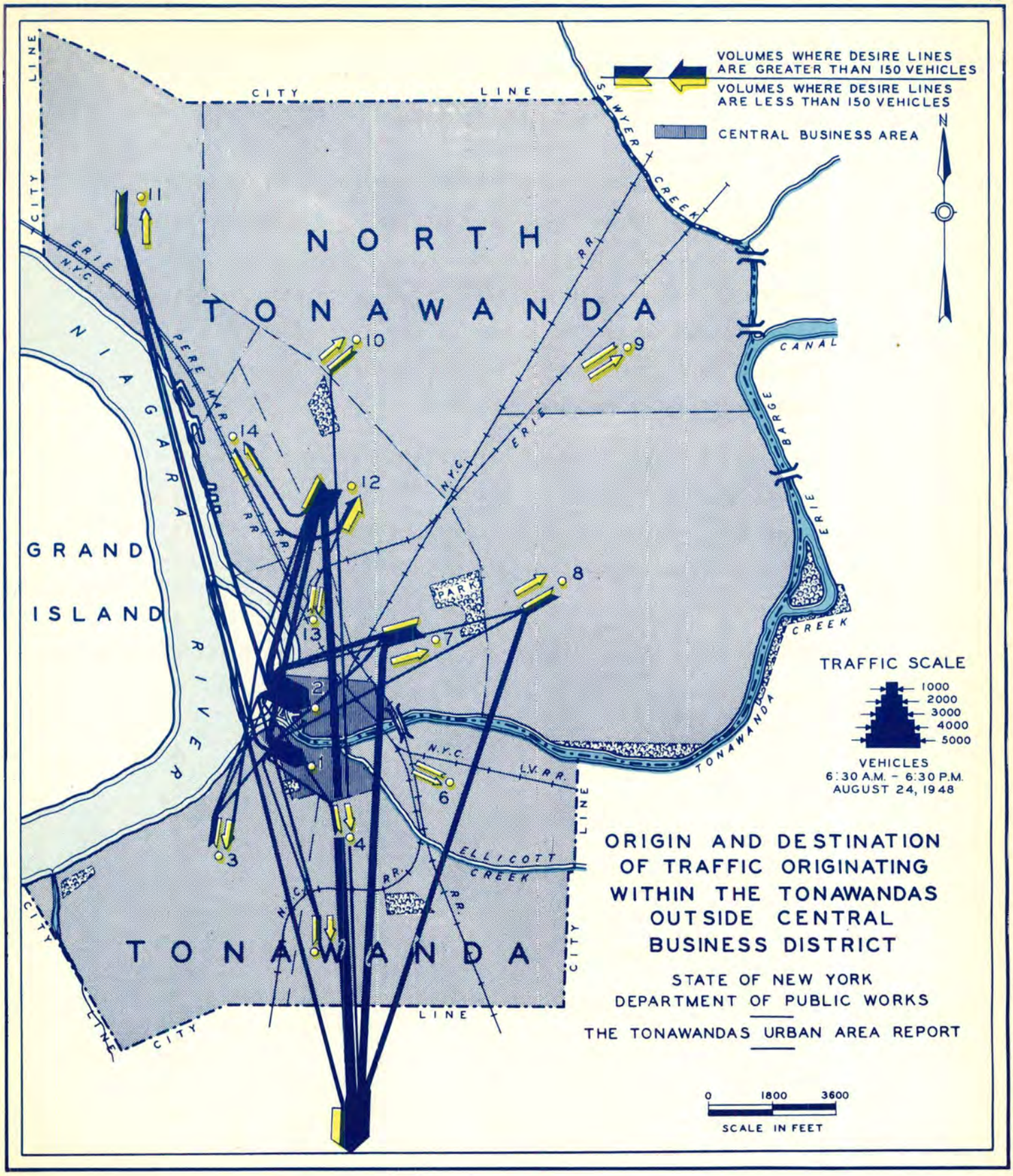
THE TONAWANDAS URBAN AREA REPORT

ORIGIN AND DESTINATION OF TRAFFIC ORIGINATING WITHIN THE TONAWANDAS OUTSIDE CENTRAL BUSINESS DISTRICT

The opposite plate is a graphic portrayal of the origins and destinations of traffic originating within the limits of the Twin Cities, outside their central business districts. The width of bands and arrows indicates the volume of traffic entering and leaving each zone, and passing between zones. Volumes large enough to form a band, that is, in excess of 150 vehicles, are shown in dark blue. The yellow arrows indicate collected volumes which are individually less than 150 vehicles per band, entering or leaving indicated zones.

The major points of origin are the heavily populated residential areas of North Tonawanda, Zones 7 and 12 while the principal local destinations are the business districts of the two cities. Lesser volumes are destined for the industrial areas.

An indicative feature portrayed on this chart is the large volume of internal traffic destined for the Buffalo area, a volume almost as great as that destined to both of the local business districts of the Tonawandas. The greater part of this local traffic originates in North Tonawanda and must cross Tonawanda Creek to reach its destination.

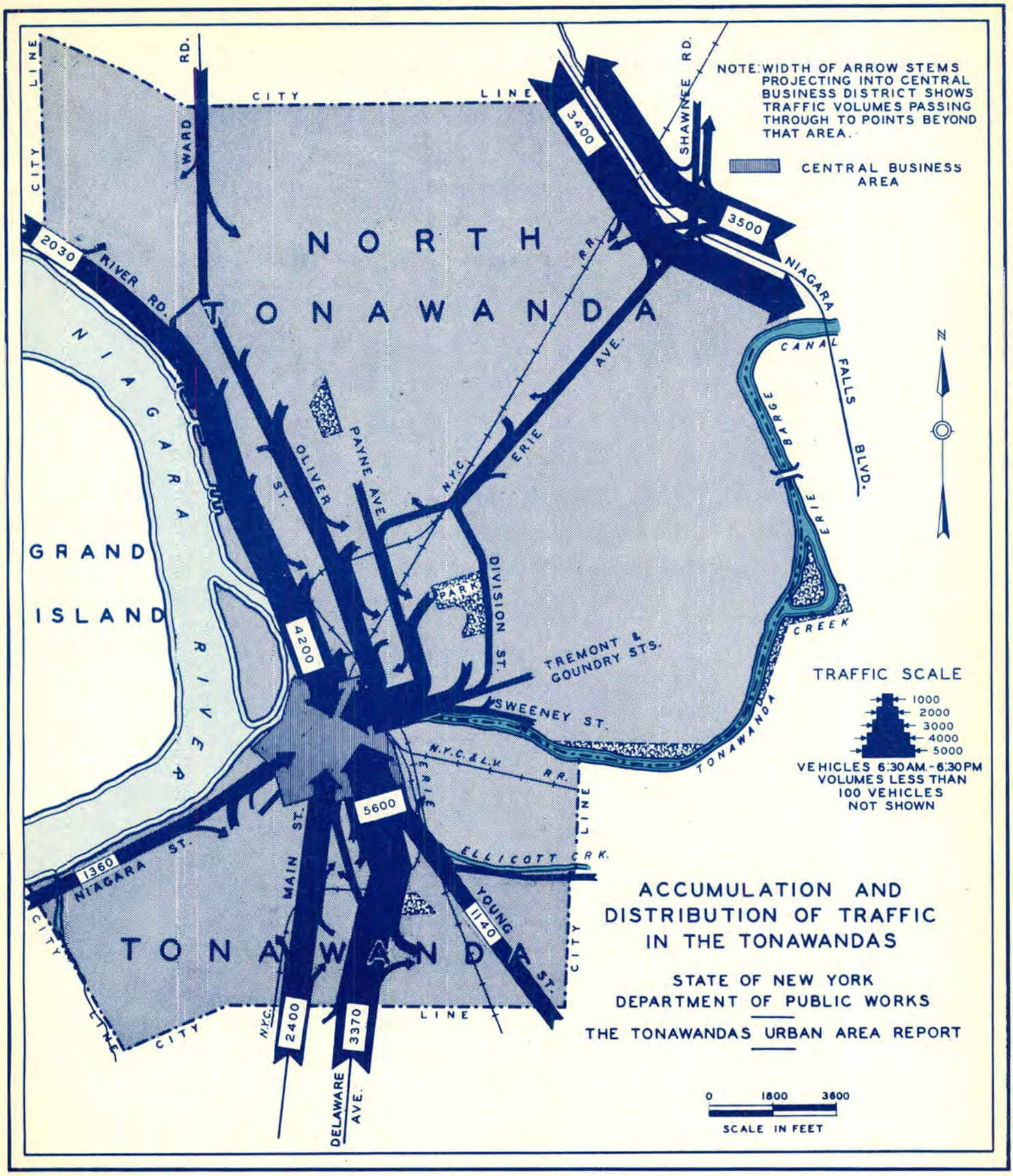


ACCUMULATION AND DISTRIBUTION OF TRAFFIC IN THE TONAWANDAS

The accompanying chart illustrates the combined flow pattern of major external and internal traffic movements focused upon the central business areas of both cities. The width of the arrow stems projecting into the downtown district measures the volume of vehicles which passes through this area to points beyond. Movements of less than 100 vehicles have not been shown.

The extent to which both city and out of city movements traverse the central business districts, not only by reason of destination within that area but also enroute to points beyond, accounts for the peak concentrations of vehicles and overloads on the major street systems.

The high percentage of through traffic on Niagara Falls Boulevard is to be expected on a peripheral route of this type.



ACCUMULATION AND DISTRIBUTION OF TRAFFIC CENTRAL BUS NESS AREA

A separate chart portraying the 12 hour accumulation and distribution of traffic within the confines of the cities' business districts supplements the traffic pattern shown on the preceding plate.

The traffic volumes entering this area weave a complex pattern. The chart illustrates the many right and left hand turning motions which take place on the north side of the bridge, particularly at the Delaware Avenue Bridge crossing. It indicates the extent to which traffic is forced to detour from straight lines of travel in order to cross over the Tonawanda Creek bridges.

LEGEND

- TRAFFIC FROM THE NORTH AND NORTHWEST
- TRAFFIC FROM THE NORTHEAST
- TRAFFIC FROM THE SOUTH AND SOUTHEAST
- TRAFFIC FROM THE SOUTHWEST

TRAFFIC SCALE

1000
2000
3000
4000
5000

VEHICLES
6:30 A.M. - 6:30 P.M.
AUGUST 24, 1948

ACCUMULATION AND DISTRIBUTION OF TRAFFIC CENTRAL BUSINESS AREA THE TONAWANDAS

STATE OF NEW YORK
DEPARTMENT OF PUBLIC WORKS

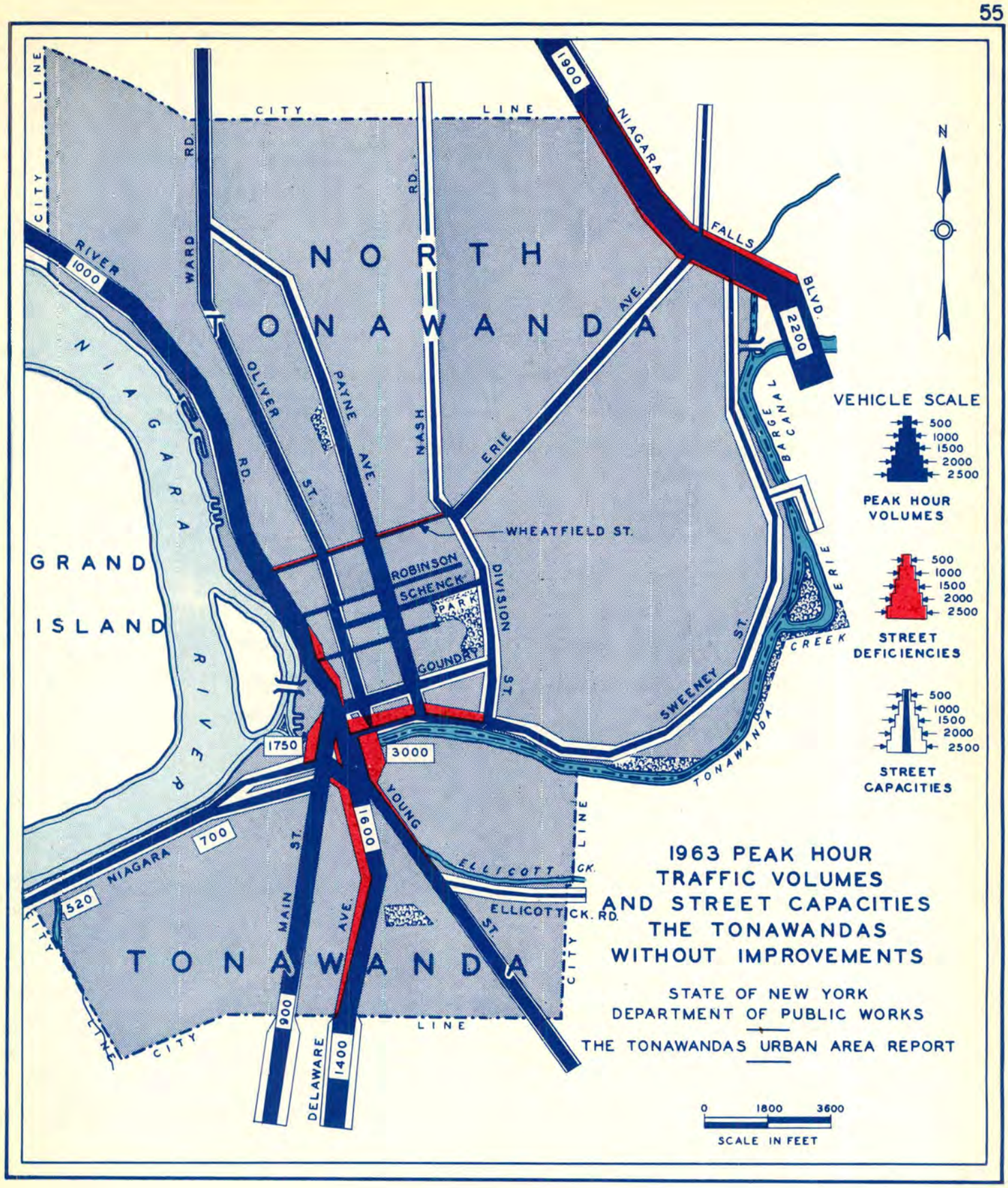
THE TONAWANDAS URBAN AREA REPORT

1963 PEAK HOUR VOLUMES AND STREET CAPACITIES WITHOUT IMPROVEMENTS

The relation of the capacity of the present street system of the Tonawandas to the estimated 1963 two directional peak hour traffic flow is illustrated on the accompanying plate.

It has been shown previously that deficiencies in street capacities exist at present on the Webster Street and Delaware Avenue Canal Bridges, Delaware Avenue, Sweeney Street and River Road.

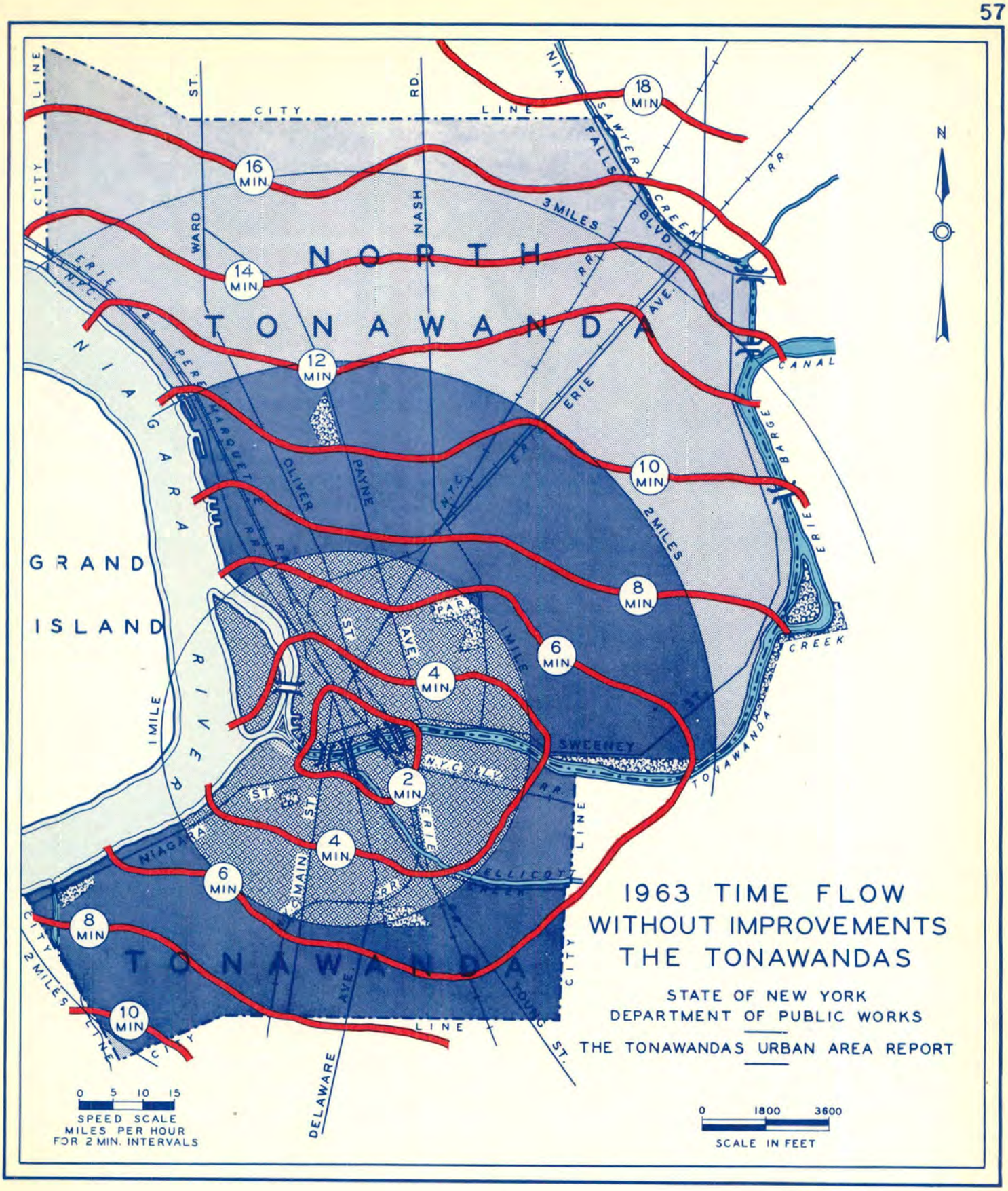
The traffic volumes anticipated by 1963 will cause a proportionate increase in peak hour loads, with the result that the present street deficiencies will develop further and be extended along the various major arteries. By 1963, all of Delaware Avenue in the City of Tonawanda will be inadequate during the period of peak hour travel. The capacity of Sweeney Street between Webster and Division Streets will be less than half of that required. A deficiency will also appear on Niagara Falls Boulevard within the North Tonawanda City limits, where the two directional peak hour load will then approximate 2200 vehicles. The deficiencies for 1963 on the caral crossings are shown to be more than double those which were indicated for 1948. Insufficient street capacity is also indicated on Wheatfield Street between River Road and Division Street.



1963 TIME FLOW
WITHOUT IMPROVEMENTS

Without arterial improvements, the excess 1963 vehicle volumes will bring about increased delays and added congestion on nearly all of the principal streets in the Tonawandas. The accompanying plate, The 1963 Time Flow map, indicates the expected travel time from the central business area to the city lines along the radial streets. It was computed from 1948 traffic speeds using anticipated 1963 peak hour volumes and present roadway widths.

A comparison of this plate with the time flow chart for 1948 indicates the extent to which speed would be reduced and congestion increased as greater traffic volumes develop. An indication of the loss of travel time in the central business area is the estimated speed of from 4 to 6 miles per hour along Main Street and Delaware Avenue. Travel through the business area in North Tonawanda would likewise be at corresponding low speeds.



1963 TIME FLOW WITHOUT IMPROVEMENTS THE TONAWANDAS

STATE OF NEW YORK
DEPARTMENT OF PUBLIC WORKS

THE TONAWANDAS URBAN AREA REPORT

THE PROBLEM

THE PROBLEM

The cities of Tonawanda and North Tonawanda form a single urban community which is an integral part of a larger entity, the Niagara Frontier Metropolitan region. In addition to the normal traffic generated by motor vehicles from the 40,000 inhabitants in the area, the cities' major thoroughfares are traversed by considerable traffic passing between Buffalo and Niagara Falls and between these cities and the Tonawandas. Tonawanda Creek which separates the two communities is spanned by two highway bridges located within a block of one another, so that motorists desiring to cross are forced to converge into the comparatively restricted area at the closely spaced approaches to the bridges. The span roadways are now loaded beyond capacity during peak hour periods and the approach streets develop bottlenecks by reason of the many right and left turning movements. The westerly bridge is a lift span and during the passage of river traffic all motor vehicles are forced to cross over the remaining structure. Present congestion will increase as motor vehicle use expands proportionately with the growth of the communities and of the surrounding metropolitan areas.

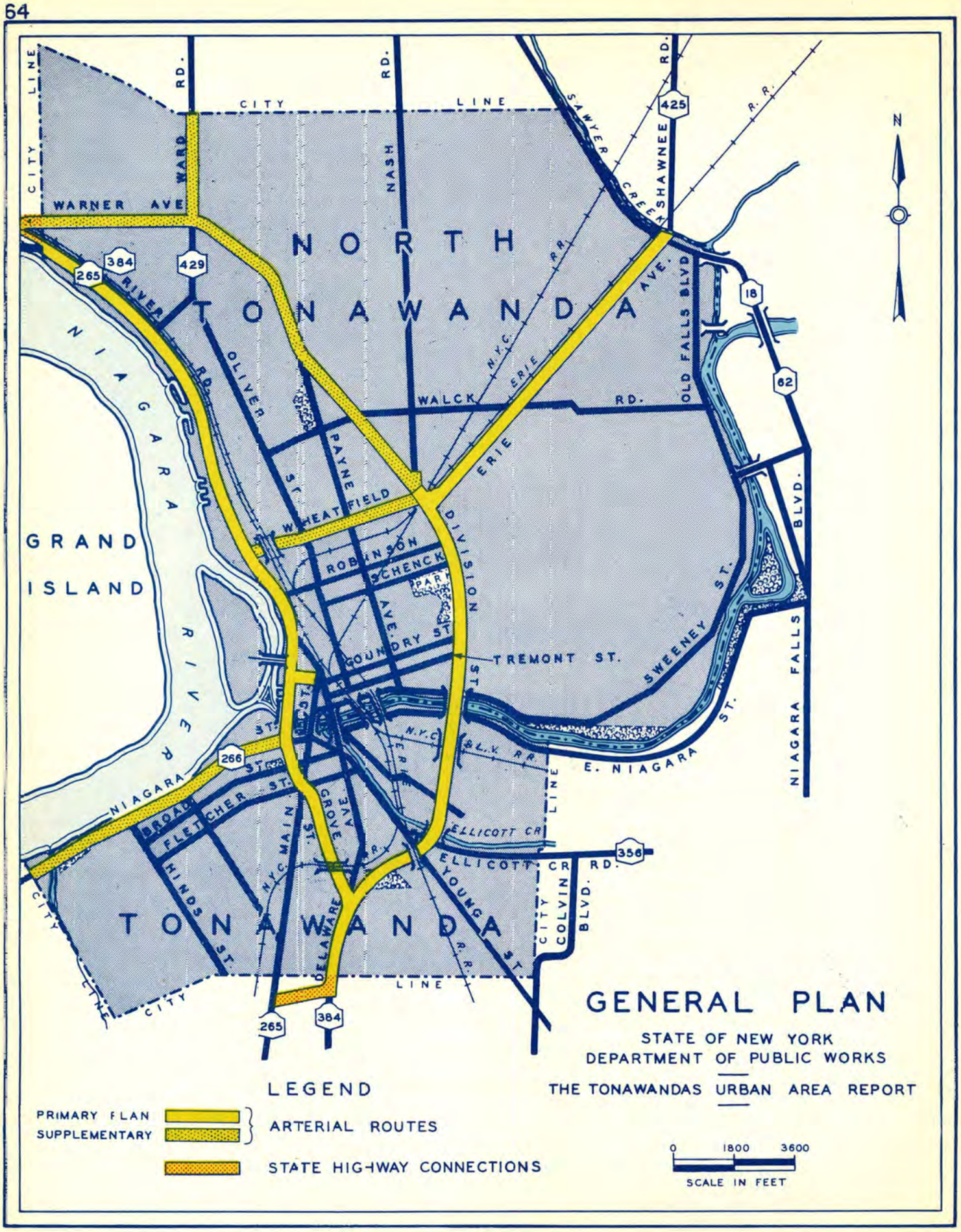
In considering the possibility of new route locations the Department was confronted with the barrier offered by the Niagara River which extends along the westerly boundaries of the cities. In addition, the network of railroads and their numerous spur lines criss-crossing throughout the

cities were obstacles which had to be considered. These physical characteristics are underlying causes for the unfavorable conditions existing along the principal routes now carrying the bulk of the traffic into and through the cities.

Although with the completion of the Niagara Thruway from Buffalo to Niagara Falls it is expected that approximately 20% of the traffic entering the Tonawandas will be diverted to that thoroughfare, the traffic remaining will require additional route facilities.

It has been shown that traffic deficiencies now exist on Main Street, Delaware Avenue, Sweeney Street and in the vicinity of the bridges. The traffic increases expected by 1963 will add to these deficiencies particularly at the canal crossings.

THE PLAN
AND
ITS BENEFITS



GENERAL PLAN

STATE OF NEW YORK
DEPARTMENT OF PUBLIC WORKS

THE TONAWANDAS URBAN AREA REPORT

LEGEND

PRIMARY PLAN
SUPPLEMENTARY
ARTERIAL ROUTES

STATE HIGHWAY CONNECTIONS

0 1800 3600
SCALE IN FEET

THE PLAN

The foregoing sections of this report have disclosed the deficiencies of the street system which presently exist in Tonawanda and North Tonawanda. They also indicate the extent to which these deficiencies will spread as additional volumes of traffic develop within the period of forecast.

Analysis of the origin and destination data from the Tonawandas traffic survey has indicated that upon completion of the Niagara Thruway between the Cities of Buffalo and Niagara Falls, approximately 20% of the traffic which normally passes through the Tonawandas will be diverted to the new facility. Despite this diversion the traffic analysis showed that the remaining vehicular volumes operating in the area would be sorely in need of additional facilities.

The proposed Master Plan includes two arterial routes extending in a north-south direction through the two cities. Two bridges would be required at the projected Tonawanda Creek crossings. The planned facilities would provide additional street capacity while their location would tend to divert traffic now forced to funnel through the restricted business area to the existing bridges.

The Master Plan has been subdivided into a primary plan of arterial routes which will accommodate major north-south traffic volumes during the period of forecast and a supplementary plan which includes the remaining sections of the plan essential to a complete arterial system within the two cities.

PRIMARY PLAN

DELAWARE-DIVISION STREET ARTERIAL ROUTE

In City of Tonawanda

In Tonawanda, an arterial route would begin at the south city line and extend along Delaware Avenue to Grove Street. The plan includes the widening of Delaware Avenue to 60 feet to accommodate 4 travel lanes and 2 parking lanes. This would involve the acquisition of a strip of right of way along the street.

From Grove Street the artery would swing northeasterly over new right of way across vacant land to a junction with State Street near Walnut Street. The route would then continue northeasterly along State Street, cross under the Erie Railroad tracks and intersect at grade with Young Street. The Erie Railroad underpass would become part of the grade crossing elimination program now under consideration for the two cities. The total paved width of this portion of the route from Delaware Avenue to Young Street would be 44 feet.

From Young Street the route would extend along Hill Street and continue in a northerly direction on new right of way, with bridge structures over Ellicott Creek, the New York Central and Lehigh Valley Railroad tracks, East Niagara Street and Tonawanda Creek. The bridge crossing Tonawanda Creek would be aligned with Division Street in North Tonawanda. The intersections at Ellicott Creek Road and Fillmore Avenue would be at grade. This portion of the route is planned for 2-24 foot travel lanes separated by a 4 foot center mall.

The Delaware-Division Street Arterial Route in Tonawanda would be 1.75 Miles in length.

In City of North Tonawanda

The continuation of the Delaware-Division Street Route in North Tonawanda would start at the planned bridge over Tonawanda Creek, cross over Sweeney Street and descend to grade on Division Street near Tremont Street with adequate connections to Sweeney Street. This section of the planned route would consist of 2-24 foot travel lanes separated by a 4 foot mall. The Tonawanda Creek Bridge would have sufficient clearance to permit passage of Barge Canal traffic.

Beyond Tremont Street the route would follow along Division Street to the intersection of Erie Avenue, where it would swing northeasterly along Erie Boulevard to Niagara Falls Boulevard (Route No. 18) at the city line.

The pavement along Division Street in this section would be 24 feet in width. The right of way of the abandoned International Railway paralleling Division Street would be available for additional travel lanes when warranted by increases in traffic volumes. As planned, the existing International Railway fill would be removed for a distance of at least 100 feet on each side of all intersecting roads on Division Street to provide additional sight distance.

A short portion of Wheatfield Street would be realigned to intersect Division Street opposite Erie Avenue and a connection to Nash Road is included in the plan.

Under the primary plan no change is contemplated on Erie Avenue from Division Street to Niagara Falls Boulevard at the east city line.

The Delaware-Division Street Arterial Route in North Tonawanda would be 3.00 Miles in length.

HIGHWAY CONNECTION - OUTSIDE THE CITY

Included in the plan is a connection from Military Road (Route 265) to Delaware Avenue (Route 384) at a point just south of the Tonawanda city line. It would extend from Military Road northeasterly on new location across vacant land to Delaware Avenue, a distance of 0.36 miles. Here a 24 foot pavement with wide shoulders is planned, with sufficient width of right of way to permit additional lanes of travel when warranted by future traffic volumes.

PRIMARY PLAN

SEYMOUR - RIVER ROAD ARTERIAL ROUTE

In City of Tonawanda

As projected by the Master Plan this arterial route would extend along Grove Street from its intersection at the proposed Delaware-Division Street Route, pass under the existing bridge of the New York Central Railroad to a point about 200 feet south of Fletcher Street, then swing northwesterly over new location, across Main Street at Fletcher and continue over Seymour Street to Niagara Street. The existing pavement along Grove and Seymour Streets would be 40 and 44 feet wide respectively.

From Niagara Street the route would continue north-

erly over new location as a 52 foot pavement, crossing Tonawanda Creek on a bridge which would have sufficient clearance to permit the passage of canal traffic.

The total length of the arterial route in Tonawanda would be about 1.04 miles.

In City of North Tonawanda

The Seymour-River Road Arterial in North Tonawanda would start at the planned bridge over Tonawanda Creek and continue northerly over new right of way across the vacant lands east of the Niagara River to intersect River Road at a point about 500 feet north of Thompson Street. Access to the central business area would be effected at the west end of Goundry Street and Thompson Street. From the 52 foot pavement on the bridge approach the arterial would continue with a 60 foot pavement from the approach to the River Road intersection. This would provide 2 lanes of travel in each direction.

The route would continue on River Road west of the Erie and Pere Marquette Railroad tracks to the west city line of North Tonawanda. From the intersect on on River Road above Thompson Street to Wheatfield Street, River Road would be 56 feet in width. The portion of the route north of Wheatfield Street would be 44 feet wide.

The total length of this section of the arterial route in North Tonawanda would be about 3.00 miles. The consolidation and relocation of several of the existing railroad sidings crossing this arterial route is planned so that the number of such crossings may be reduced to a minimum.

SUPPLEMENTARY PLAN

NIAGARA THRUWAY CONNECTION
In City of Tonawanda

Niagara Street is included in the overall plan and with State Route No. 266 would furnish a direct connection from the Niagara Thruway intc the heart of the business districts of the Tonawandas. This project would start at the west city line and extend northeasterly over existing Niagara Street to Two Mile Creek. From this point the road would swing northerly along the old bed of the Erie Canal to Clay Street where it would continue on Niagara Street to connect with the planned Seymour-River Road Arterial. The present facility is considered adequate within the period of forecast.

DIVISION-PAYNE AVENUE ARTERIAL
In City of North Tonawanda

This route would start at the intersection of the Delaware-Division Street Arterial at Wheatfield Street. From this point it would extend in a northwesterly direction over the International Railway right of way to Payne Avenue just above East Street. It would continue along Payne Avenue to Ward Road, proceed westerly on Warner Avenue and new right of way, cross over the Erie and New York Central Railroad tracks near Witmer Road and connect with River Road at the west city line of North Tonawanda. As planned, a connection would extend northerly along Ward Road from Warner and Payne Avenues to State Route 429 at the North Tonawanda city line. It is not planned to develop this route with n the period of forecast.

WHEATFIELD STREET ARTERIAL
In City of North Tonawanda

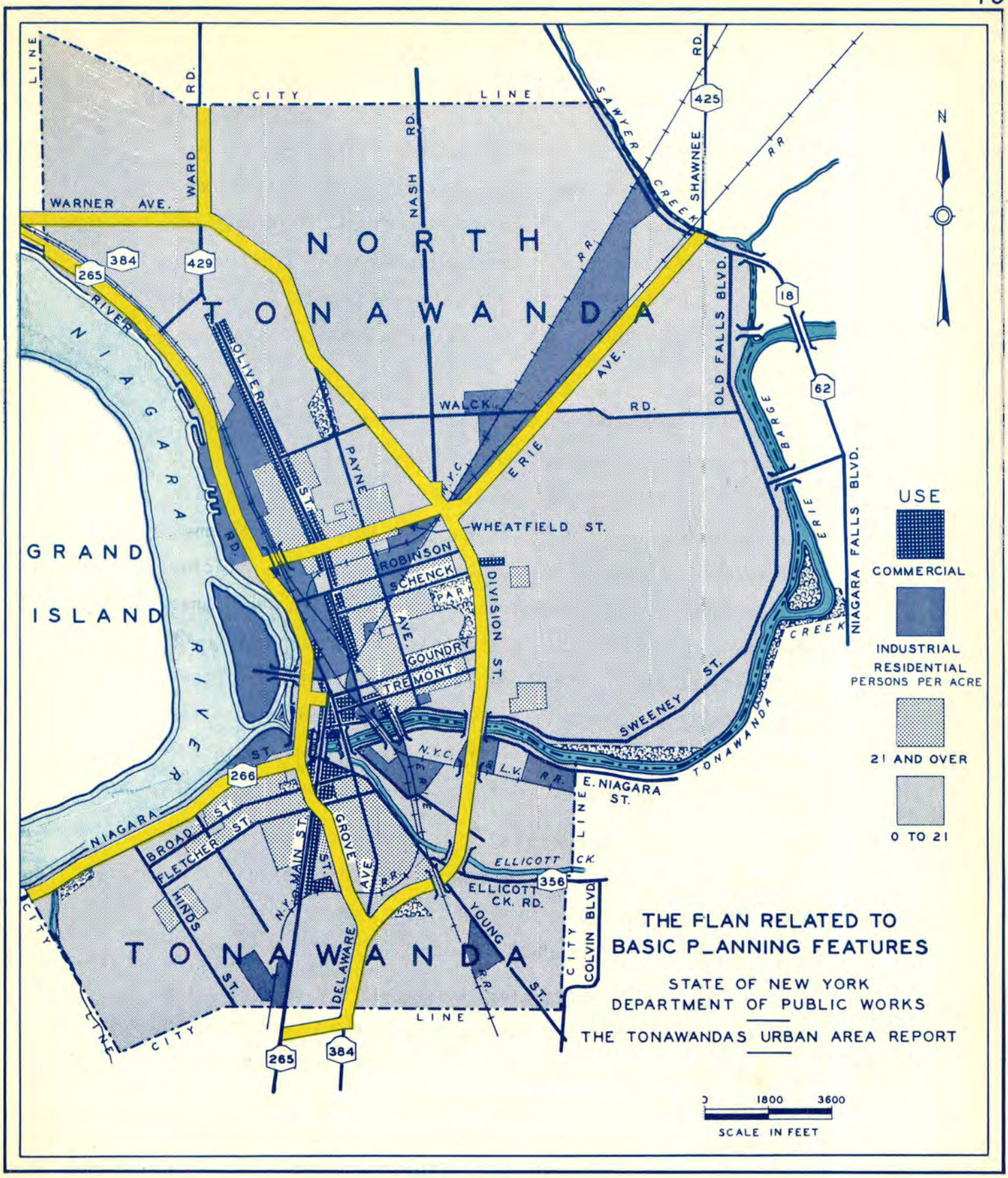
This route from River Road easterly over existing right of way to meet Division Street at Erie Avenue has been indicated as a desirable element of the overall plan. It will serve as an important connection between the planned north-south arterial routes in North Tonawanda. The realignment of the eastern end of Wheatfield Street at Erie Avenue is included in the plan within the period of forecast.

THE PLAN RELATED TO BASIC PLANNING FEATURES

This plate illustrates the relationship of the proposed arterial route plan to the existing basic planning features of the two cities. The primary industrial and commercial zones which also represent areas of high valuation are indicated thereon, together with population densities.

The greater portion of the internal areas devoted to industry, commerce and concentrated residential use in the two cities would lie between the two north-south routes. The remaining areas of important land use as shown principally in the northeast section of North Tonawanda and along the river front in both cities, would be adjacent to, or within a short distance of the planned routes.

The development of the presently sparsely settled or vacant lands, according to local zoning requirements, would be encouraged by the realization of these route plans.



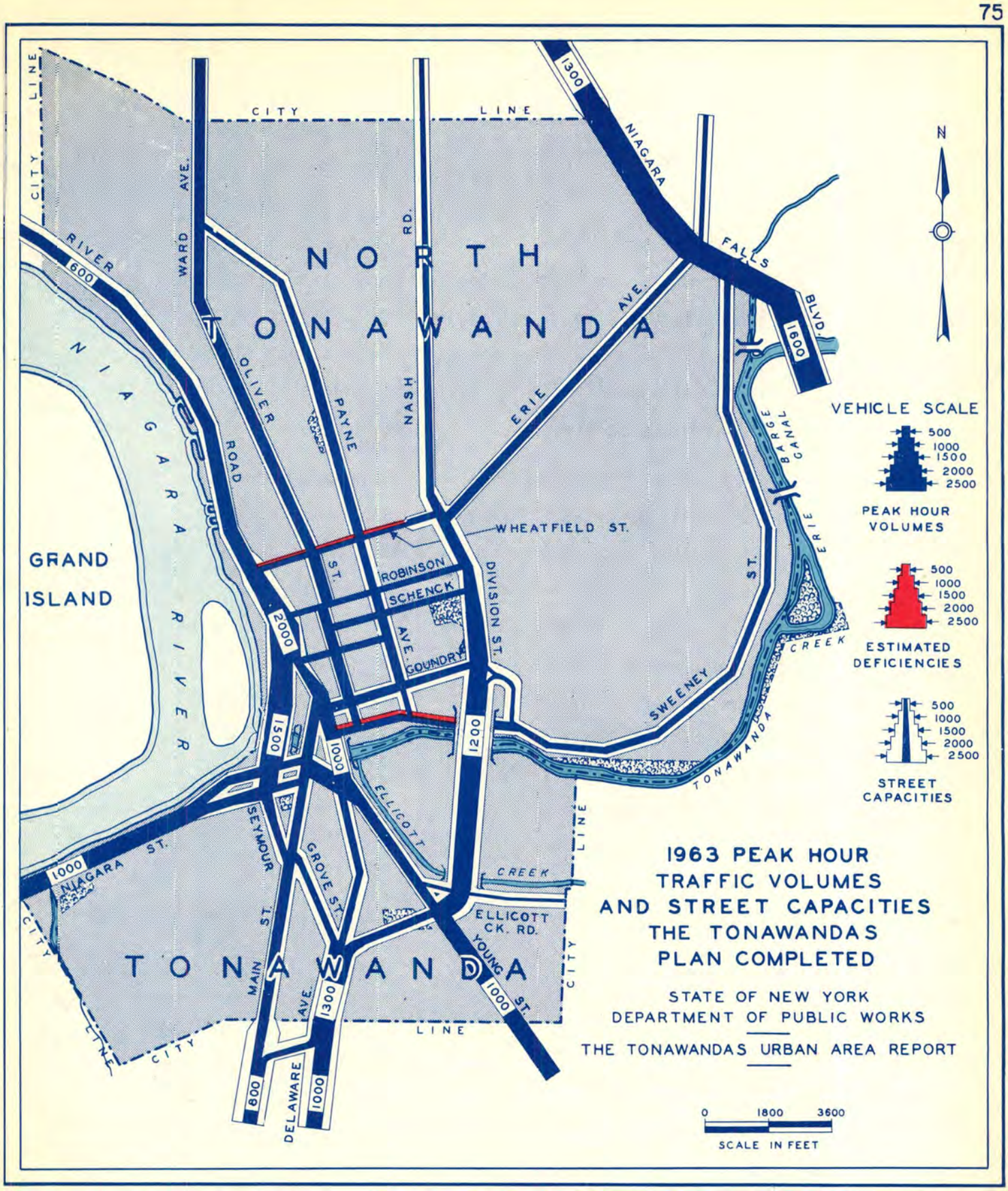
1963 PEAK HOUR TRAFFIC VOLUMES - PLAN COMPLETED

The effectiveness of the arterial routes as planned hinges directly on their capacity to accommodate future traffic volumes with a minimum of congestion. This phase of the report is illustrated on the accompanying plate which compares 1963 peak hour traffic volumes to major street and arterial capacities with the primary phase of the plan completed.

The Seymour-River Road and Delaware Avenue-Division Street arterial routes would eliminate deficiencies and resulting congestion from the canal bridges and the streets converging on them. Deficiencies are indicated on Sweeney and Wheatfield Streets because disabled or standing vehicles may temporarily block one of the two restricted travel lanes However, as a practical consideration the streets will generally be open to two lanes of travel provided the present prohibition parking on one side is continued. Increased capacity could be obtained on Young Street if the diagonal parking were replaced by parallel parking.

The estimated diversion of traffic to the Niagara Thruway across Grand Island would eliminate deficiencies from the Niagara Falls Boulevard, and reduce north-south through traffic within the Tonawandas.

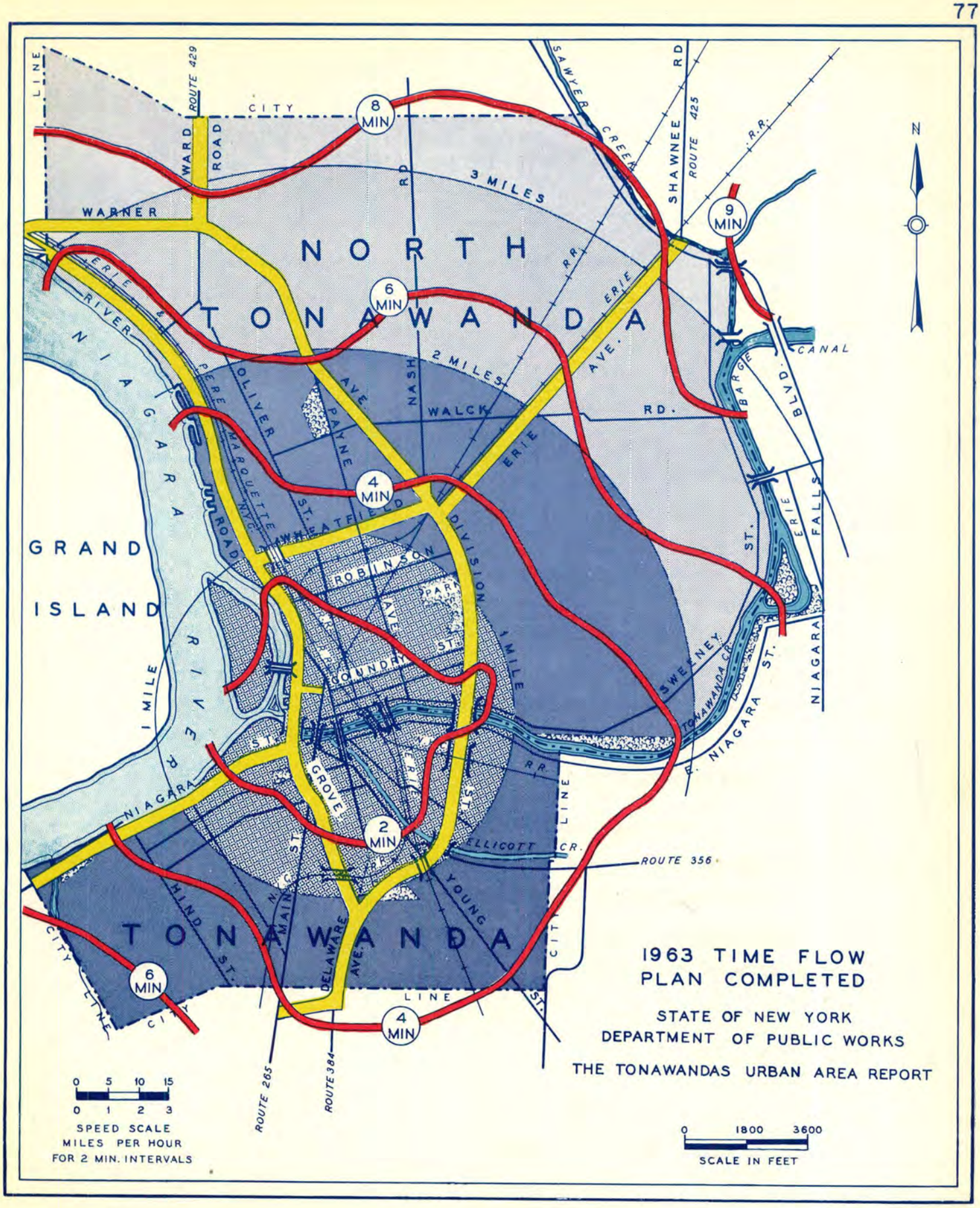
The traffic facilities included in the primary phase of the plan, supported by standard traffic and parking control measures, would provide for estimated traffic requirements within the period of forecast. Volume increases subsequent to that period would indicate the developments necessary under the supplementary phase of the plan.



1963 TIME FLOW PLAN COMPLETED

The arterial routes outlined in the primary plan would materially aid traffic flow and travel time within the Tonawandas urban area. The estimated time that would be required to drive from the heart of the business area to various points along the major radial streets is illustrated by the accompanying plate.

A marked freedom of movement in and about the business area will be noted. On the previous plate showing the 1963 T me Flow W thout Improvements, vehicular speeds in the business district along Mair Street and Delaware Avenue were indicated at 4 to 6 miles per hour. With the plan completed, speeds in the same area would increase to 15 and 20 miles per hour. Travel time along Main Street from the business area southerly to the south city line would be cut in hal-. Traffic flow throughout the urban area would be relatively free and uninterrupted.



1963 TIME FLOW PLAN COMPLETED

STATE OF NEW YORK
DEPARTMENT OF PUBLIC WORKS

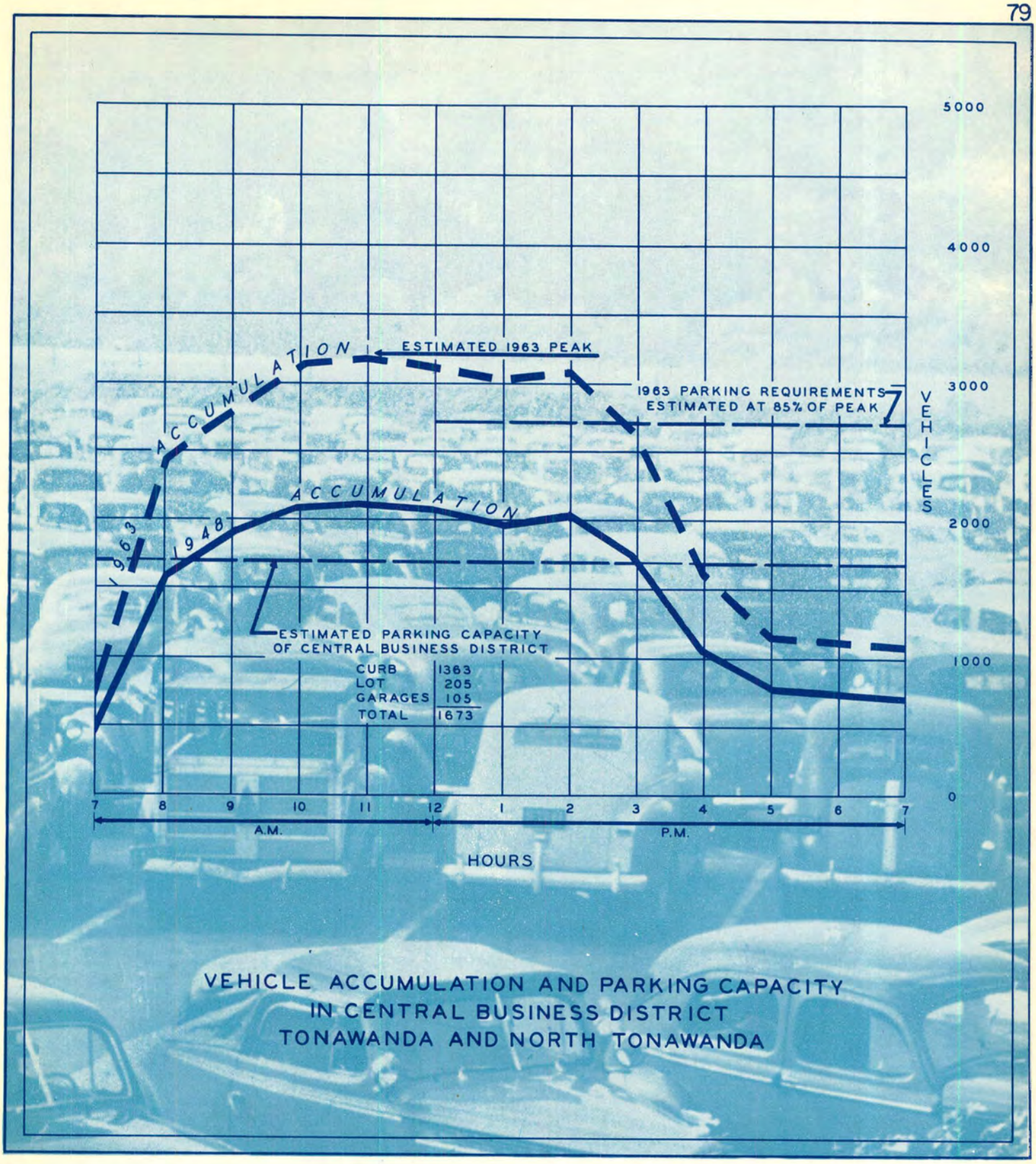
THE TONAWANDAS URBAN AREA REPORT

VEHICLE ACCUMULATION AND PARKING CAPACITY IN CENTRAL BUSINESS DISTRICT

The traffic survey furnished data on vehicle accumulation and parking within the central business area of Tonawanda and North Tonawanda. The accumulation represents both parked cars and those moving about within the area. Parking spaces were derived from curb distances, parking lot areas and capacities of garages devoted to public parking. These data are illustrated on the accompanying plate. The estimated increases in both accumulation and parking requirements at the end of the forecast period are also shown.

A total of 1673 parking spaces existed within the adjacent business districts of the two cities. The peak accumulation of vehicles at 11:00 A.M. was in excess of this parking capacity. By 1963 the estimated maximum accumulation indicates a total requirement of 2700 parking spaces in the central area of both cities.

In order that internal motor transportation may realize maximum benefits from the planned routes, coordinated local action in the development of adequate parking and terminal facilities is a necessary complement to the arterial route plan.



VEHICLE ACCUMULATION AND PARKING CAPACITY
IN CENTRAL BUSINESS DISTRICT
TONAWANDA AND NORTH TONAWANDA

ESTIMATED COST ANALYSIS

The tabulations which follow present construction and right of way cost estimates for component parts of the master plan for arterial routes in the Tonawandas urban area.

The various projects have been listed in accordance with a desirable sequence established after consideration of traffic needs, immediate usefulness, and availability of right of way.

The cost estimates are based on current prices and right of way estimates are based on equalized current assessed land values increased by fifteen percent.

Following mutual agreement as to the Master Plan and legislative authorization of the routes, projects may be undertaken. Scheduling of specific projects is subject to local approval of detailed design and the prevailing allocations of federal, state and city funds.

ARTERIAL ROUTES

PRIMARY PLAN WITHIN CITY OF TONAWANDA

NAME	LENGTH (In Miles)	DESCRIPTION
SEYMOUR-RIVER ROAD ARTERIAL ROUTE		
FROM DELAWARE AVE. NORTHWESTERLY ALONG GROVE ST. TO FLETCHER ST.	0.68	40' ROADWAY WITH CURBS. CONNECTION FROM GROVE TO FLETCHER STREETS. ACQUIRE RIGHT OF WAY WHERE NEEDED.
FROM FLETCHER ST. ALONG SEYMOUR TO NIAGARA ST.	0.25	44' PAVEMENT WITH CURBS. ACQUIRE RIGHT OF WAY WHERE NEEDED.
FROM NIAGARA ST. NORTHERLY ON NEW LOCATION TO CENTER LINE OF NEW YORK STATE BARGE CANAL	0.11	52' PAVEMENT WITH CURBS. PORTION OF FOUR LANE BRIDGE ACROSS BARGE CANAL. ACQUIRE RIGHT OF WAY WHERE NEEDED.
TOTAL FOR SEYMOUR-RIVER ROAD	**1.04**	
DELAWARE-DIVISION STREET ARTERIAL ROUTE		
FROM SOUTH CITY LINE NORTHERLY ALONG DELAWARE AVE. TO GROVE ST.	0.46	60' PAVEMENT WITH CURBS. ACQUIRE ADDITIONAL RIGHT OF WAY.
FROM DELAWARE AVE. NORTHEASTERLY ON NEW LOCATION TO STATE ST. AND CONTINUE ON STATE ST. TO YOUNG ST.	0.45	44' PAVEMENT WITH CURBS. ACQUIRE NEW RIGHT OF WAY.
FROM YOUNG ST. ALONG MILL ST. AND NORTHWESTERLY ON NEW LOCATION TO CENTER LINE OF NEW YORK STATE BARGE CANAL.	0.84	2-24' ROADWAYS WITH MALL SEPARATION. BRIDGES OVER ELLICOTT CREEK, NEW YORK CENTRAL AND LEHIGH VALLEY RAILROADS AND PORTION OF BRIDGE ACROSS THE BARGE CANAL.
TOTAL FOR DELAWARE-DIVISION STREET	**1.75**	
TOTAL FOR ARTERIAL ROUTES IN TONAWANDA	**2.79***	

* *Compares to 3.40 miles in the present Highway Law.*

ESTIMATED COSTS

CONSTRUCTION	RIGHT OF WAY	TOTAL COST	STATE SHARE	CITY SHARE
$216,000	$ 8,000	$224,000	$220,000	$ 4,000
93,000	14,000	107,000	100,000	7,000
304,000	56,000	360,000	332,000	28,000
$613,000	$78,000	$691,000	$652,000	$39,000
$148,000	$132,000	$280,000	$214,000	$66,000
164,000	4,000	168,000	166,000	2,000
1,118,000	70,000	1,188,000	1,153,000	35,000
$1,430,000	$206,000	$1,636,000	$1,533,000	$103,000
$2,043,000	$284,000	$2,327,000	$2,185,000	$142,000

ARTERIAL ROUTES

PRIMARY PLAN WITHIN CITY OF NORTH TONAWANDA

NAME	LENGTH (In Miles)	DESCRIPTION
SEYMOUR-RIVER ROAD ARTERIAL ROUTE		
FROM CENTER LINE OF BARGE CANAL NORTHERLY TO RIVER ROAD 500' NORTH OF THOMPSON STREET.	0.52	PORTION OF FOUR LANE BRIDGE ACROSS BARGE CANAL WITH 52 FT. APPROACH. 60' PAVEMENT ON NEW LOCATION. CONNECT GOUNDRY AND THOMPSON STREETS TO ARTERIAL ROUTE WITH 44' PAVEMENTS. PLAN INCLUDES RELOCATION OF RAILROAD SWITCH TRACKS.
FROM 500' NORTH OF THOMPSON ST. NORTHWESTERLY ALONG RIVER ROAD TO WHEATFIELD ST.	0.42	56' PAVEMENT ALONG EXISTING RIVER ROAD. ACQUIRE ADDITIONAL RIGHT OF WAY. PLAN INCLUDES RELOCATION OF RAILROAD TRACKS.
FROM WHEATFIELD ST. NORTHWESTERLY ALONG RIVER ROAD TO NORTH TONAWANDA WEST CITY LINE.	2.06	44' PAVEMENT ALONG EXISTING RIVER ROAD. ACQUIRE RIGHT OF WAY WHERE NEEDED. PLAN INCLUDES RELOCATION OF RAILROAD SWITCH TRACKS.
TOTAL FOR SEYMOUR-RIVER ROAD	3.00	
DELAWARE-DIVISION STREET ARTERIAL ROUTE		
FROM CENTER LINE OF NEW YORK STATE BARGE CANAL NORTHERLY TO TREMONT ST.	0.26	PORTION OF FOUR LANE BRIDGE ACROSS BARGE CANAL. 2-24' ROADWAYS WITH MALL SEPARATION. CONNECTIONS TO SWEENEY ST.
FROM TREMONT ST. NORTHERLY ALONG DIVISION ST. TO ERIE AVE.	0.87	24' PAVEMENT WITH CURBS. CONNECTIONS TO WHEATFIELD ST. AND NASH ROAD
FROM DIVISION ST. NORTHEASTERLY ALONG ERIE AVE. TO NIAGARA FALLS BLVD.	1.87	NO PLANNED IMPROVEMENTS.
TOTAL FOR DELAWARE-DIVISION STREET	3.00	
TOTAL FOR ARTERIAL ROUTES IN NORTH TONAWANDA	6.00*	
TOTAL ARTERIAL ROUTES TONAWANDAS	8.79**	

* *Compares with 4.40 Miles in the present Highway Law.*

** *Compares with 7.30 Miles in the present Highway Law for both cities.*

ESTIMATED COSTS

CONSTRUCTION	RIGHT OF WAY	TOTAL COST	STATE SHARE	CITY SHARE
$402,000	$50,000	$452,000	$427,000	$25,000
154,000	28,000	182,000	168,000	14,000
506,000	34,000	540,000	523,000	17,000
$1,062,000	$112,000	$1,174,000	$1,118,000	$56,000
$508,000	$ 4,000	$512,000	$510,000	$ 2,000
$167,000	NONE	$167,000	$167,000	NONE
$675,000	$ 4,000	$679,000	$677,000	$ 2,000
$1,737,000	$116,000	$1,853,000	$1,795,000	$58,000
$3,780,000	$400,000	$4,180,000	$3,980,000	$200,000

HIGHWAY CONNECTION OUTSIDE CITY

PRIMARY PLAN

NAME	LENGTH (In Miles)	DESCRIPTION
HIGHWAY CONNECTION TO THE SOUTH FROM STATE RCUTE 265 NORTHEASTERLY TO STATE ROUTE 384, SOUTH OF TONAWANDA CITY LINE.	0.36	24' PAVEMENT WITH WIDE SHOULDERS. ACQUIRE NEW RIGHT OF WAY.
TOTAL FCR STATE HIGHWAY CONNECTION	**0.36***	
TOTAL FCR TONAWANDAS UREAN AREA	**9.15**	

* *This is an increase of 0.36 miles to the net State Highway System outside the city.*

ESTIMATED COSTS

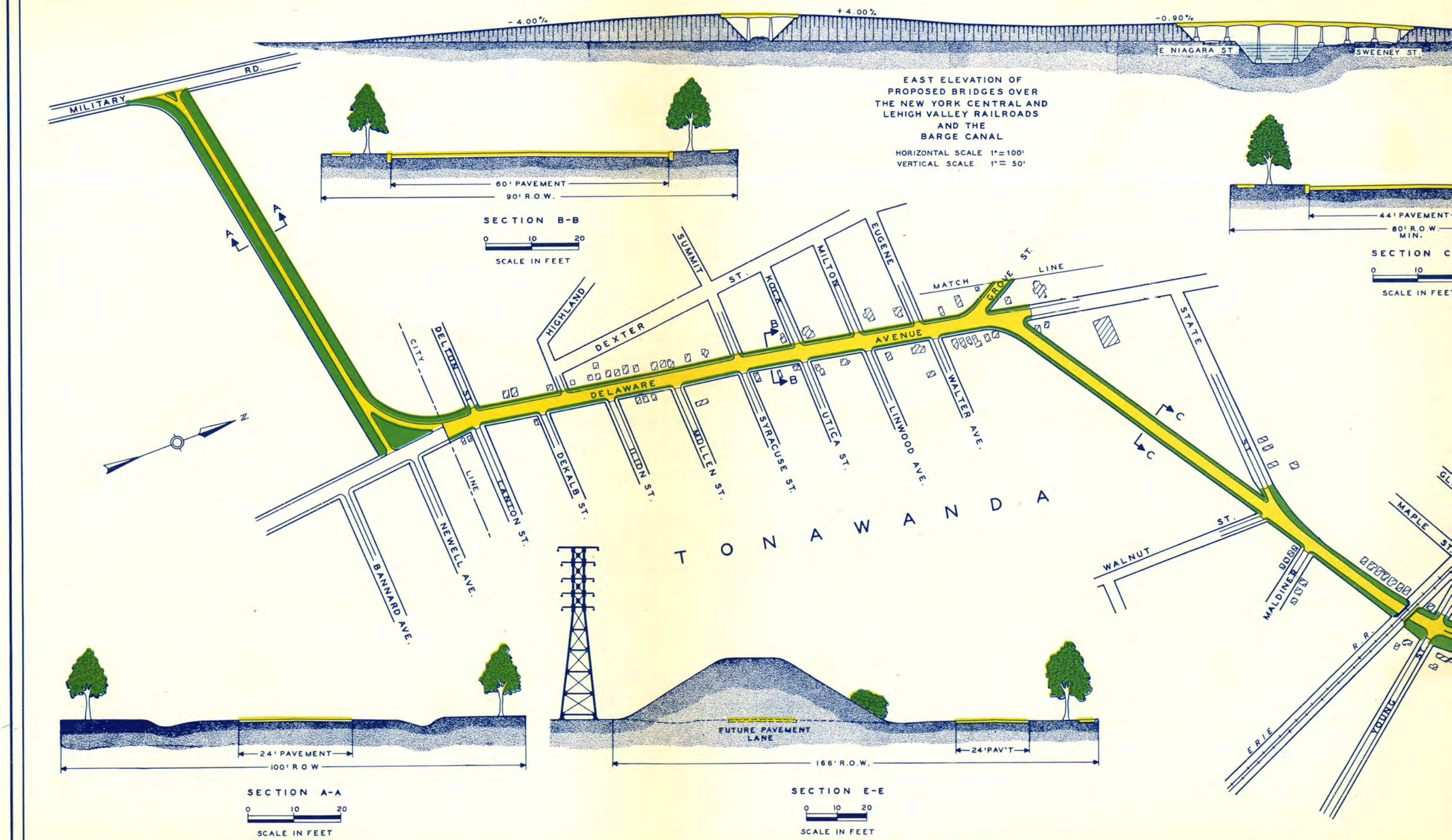
CONSTRUCTION	RIGHT OF WAY	TOTAL COST	STATE SHARE	CITY SHARE
$56,000	$5,000	$61,000	$61,000	NONE
$56,000	$5,000	$61,000	$61,000	None
$3,836,000	$405,000	$4,241,000	$4,041,000	$200,000

DETAILS OF THE PLAN

DETAILS OF THE PLAN

The following plates show the location of the planned primary routes in relation to the adjacent street system, the character and extent of individual projects and the general right of way requirements.

The estimated right of way requirements are shown in green, and traffic lanes and interchange pavements are shown in yellow.



DELAWARE AVENUE - DIVISION STREET

ARTERIAL ROUTE

AND HIGHWAY CONNECTION

NORTH TONAWANDA

SWEENEY PARK

SCHENCK ST.

RANSOM ST.

ROBINSON ST.

ABANDONED RAILROAD FILL

DIVISION ST.

AVALON PL.

RUMBOLD ST.

E. SCHENCK ST.

E. THOMPSON ST.

LOCUST ST.

CHESTNUT ST.

WRIGHT AVE.

MAZDA TERR.

CHRISTIANA ST.

MATCH LINE

N.Y.C. ERIE R.R.

WHEATFIELD

NASH RD.

ESSIE ST.

LEONHARDT AVE.

ERIE AVE.

N.Y.C. ERIE R.R.

E

E

N

SWEENEY

CITY

NIAGARA ST.

DEGRAFF MEMORIAL HOSPITAL

TREMONT

GOUNDRY ST.

MATCH LINE

STARK AVE.

E. NIAGARA

BARGE CANAL

ST.

LINE

GRANT AVE.

ST.

LINCOLN

MILL ST.

FILLMORE

N.Y.C. R.R.

ELLICOTT CK. RD.

ELLICOTT CREEK

D

D

24' PAVEMENT | 4' MALL | 24' PAVEMENT

100' MINIMUM R.O.W.

SECTION D-D

0 10 20

SCALE IN FEET

DELAWARE AVENUE - DIVISION STREET ARTERIAL ROUTE

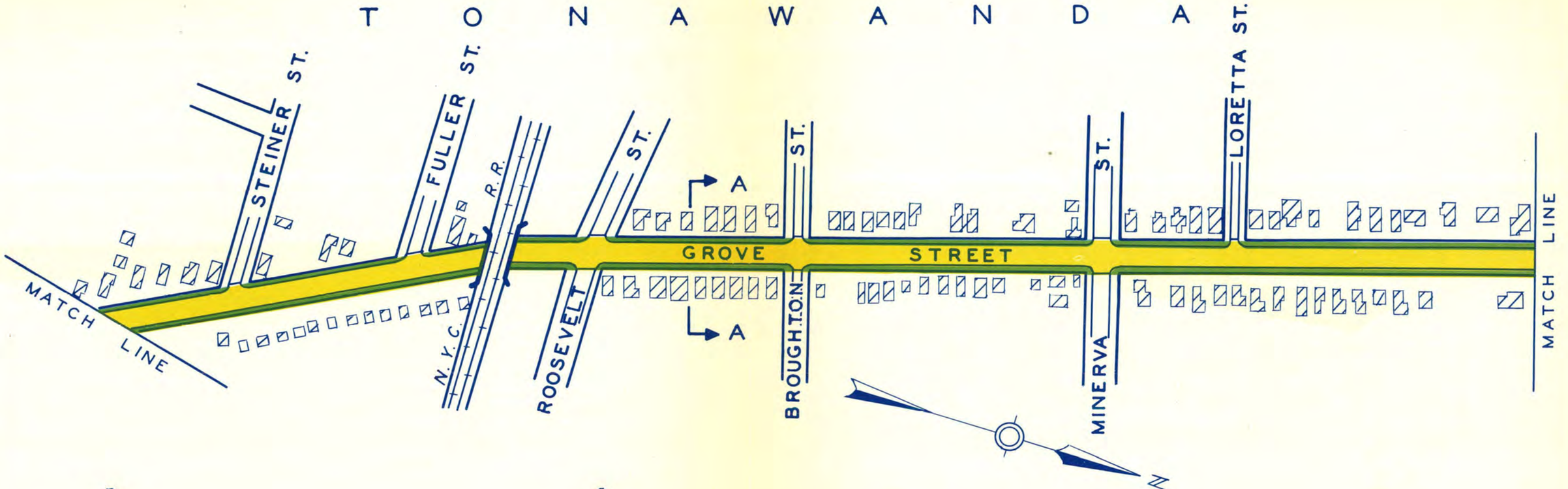
STATE OF NEW YORK
DEPARTMENT OF PUBLIC WORKS

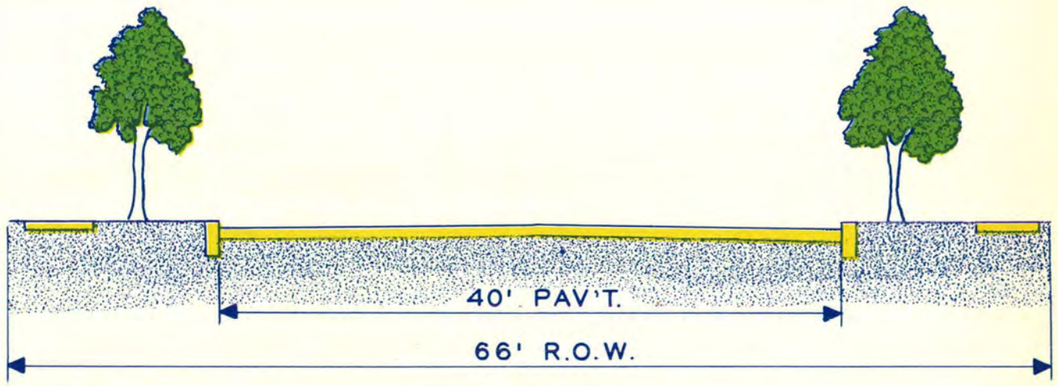
THE TONAWANDAS URBAN AREA REPORT

0 200 400

SCALE IN FEET

T O N A W A N D A





SECTION A-A

0 10 20

SCALE IN FEET

GROVE STREET SECTION
SEYMOUR ST. - RIVER RD.
ARTERIAL ROUTE

STATE OF NEW YORK
DEPARTMENT OF PUBLIC WORKS

THE TONAWANDAS URBAN AREA REPORT

0 200 400

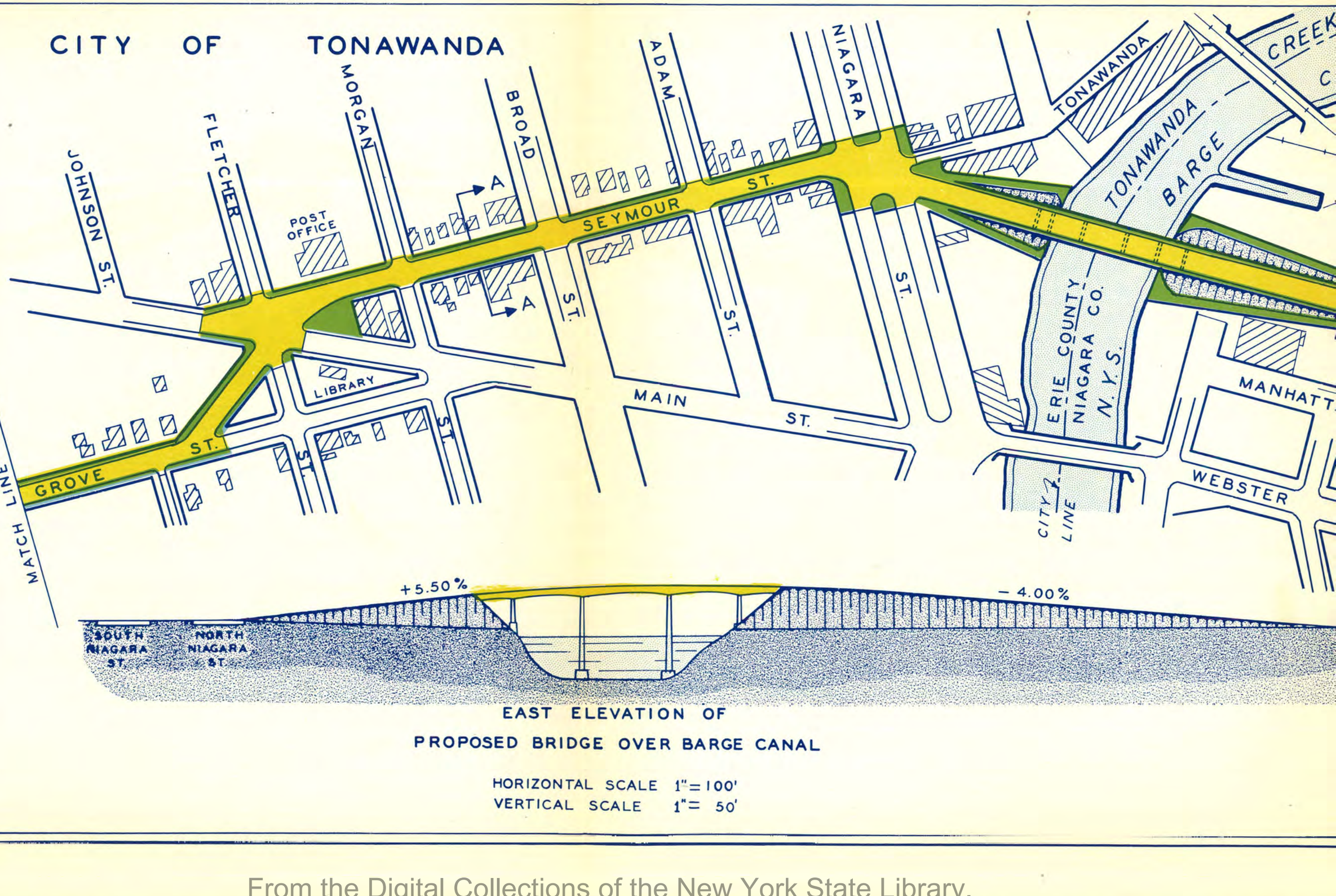
SCALE IN FEET

GROVE STREET SECTION

SEYMOUR STREET - RIVER ROAD

ARTERIAL ROUTE

CITY OF TONAWANDA



EAST ELEVATION OF
PROPOSED BRIDGE OVER BARGE CANAL

HORIZONTAL SCALE 1"=100'
VERTICAL SCALE 1"= 50'

SEYMOUR STREET - RIVER ROAD

ARTERIAL ROUTE

JOHNSON ST. TO ROBINSON ST.

NIAGARA RIVER

TONAWANDA CHANNEL

MATCH LINE

N.Y.C. R.R.

CITY OF NORTH TONAWANDA

B

B

ERIE R.R.

ISLAND ST.

THOMPSON ST.

GOUNDRY ST.

RIVER ROAD

ERIE & N.Y.C. R.R.

ROBINSON ST.

N

44' PAV'T.
66' R.O.W.

SECTION A-A

0 20

SCALE IN FEET

60' PAV'T.
100' R.O.W.

SECTION B-B

0 20

SCALE IN FEET

SEYMOUR STREET
RIVER ROAD ARTERIAL ROUTE
JOHNSON ST. TO ROBINSON ST.

STATE OF NEW YORK
DEPARTMENT OF PUBLIC WORKS

THE TONAWANDAS URBAN AREA REPORT

0 200 400

SCALE IN FEET

TONAWANDA ISLAND

N I A G A R A

AMERICAN RADIATOR CORP.

A

A

RIVER ROAD

B

B

MATCH LINE

SOMMER ST.

WHEATFIELD ST.

N.Y.C. R.R. YARDS

ERIE R.R. YARDS

MILLER

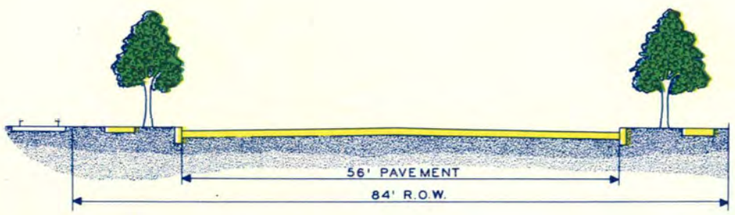
EAST AVE.

BUFFALO BOLT CO.

FREDERICKA ST.

FELTON

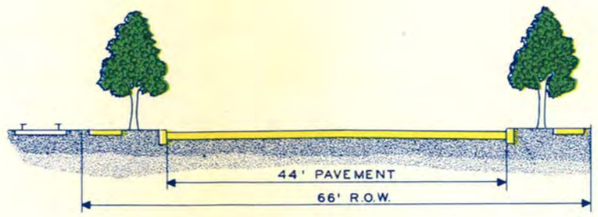
C I T Y O F N O R T H



SECTION A-A

0 10 20

SCALE IN FEET



SECTION B-B

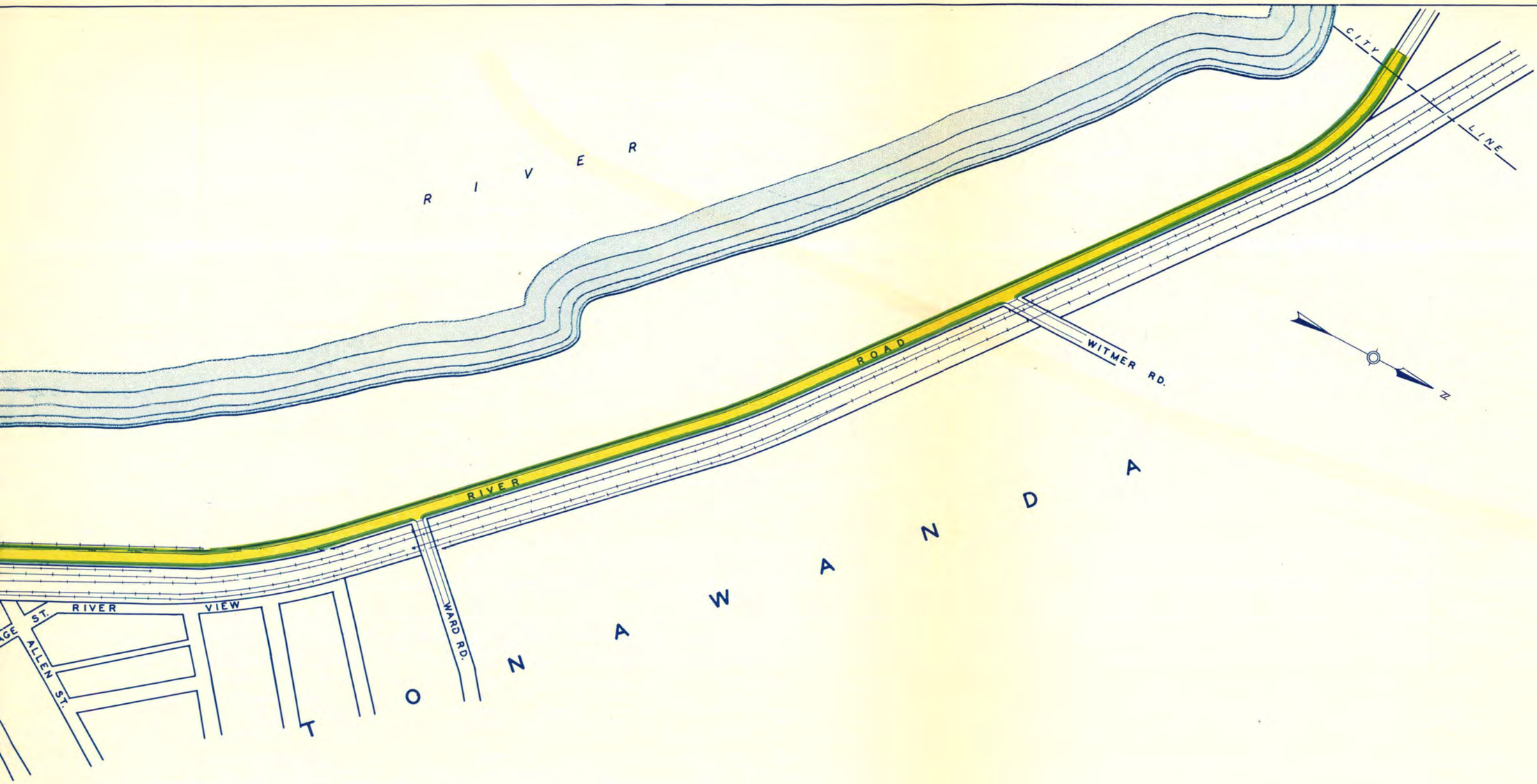
0 10 20

SCALE IN FEET

SEYMOUR STREET - RIVER ROAD

ARTERIAL ROUTE

ROBINSON ST. TO WEST CITY LINE



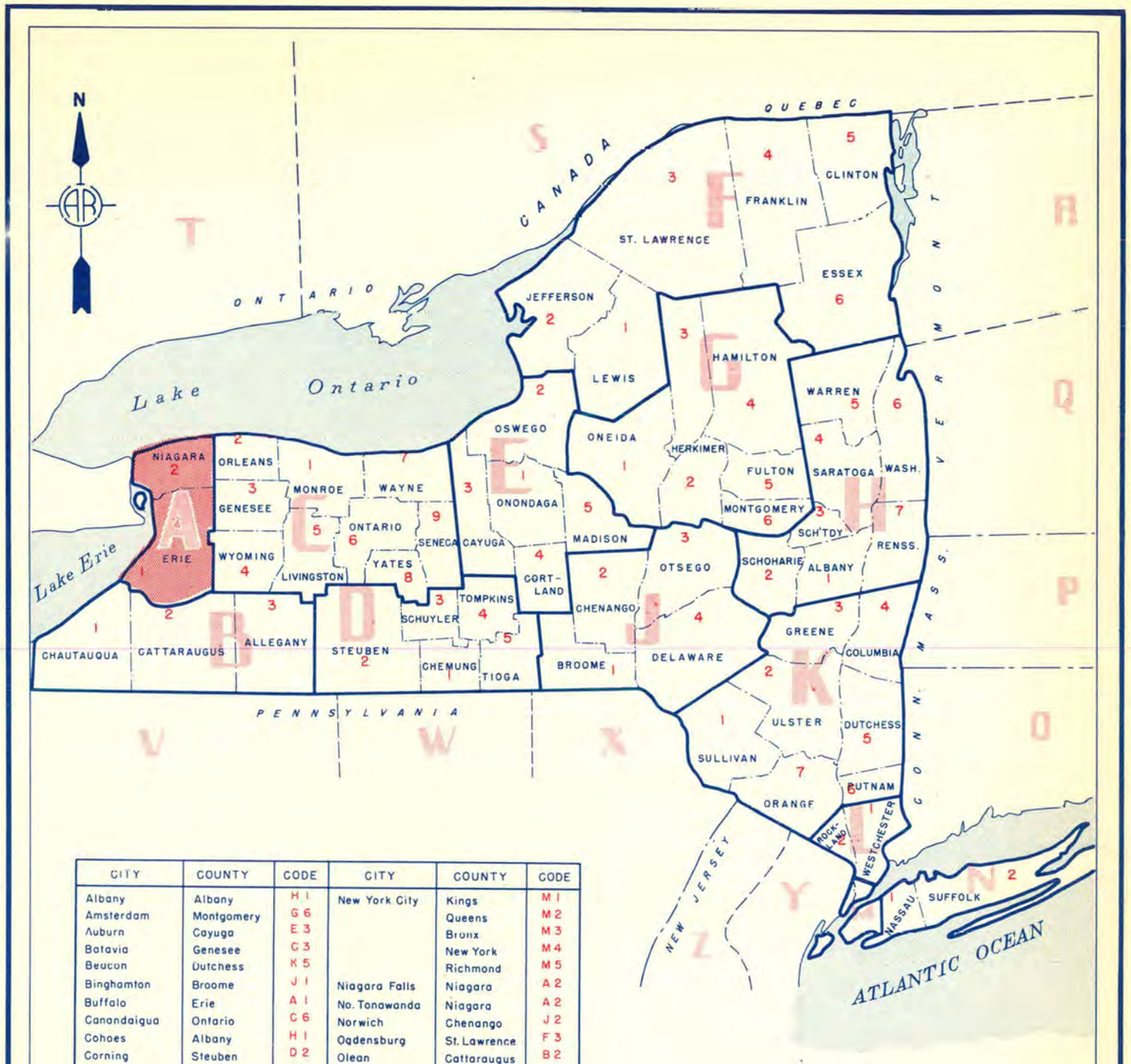
NOTE:
THE PLAN PROPOSES THE CONSOLIDATION OF SEVERAL OF THE EXISTING RAILROAD SIDINGS CROSSING THIS ARTERIAL ROUTE SO THAT THE NUMBER OF SUCH CROSSINGS MAY BE REDUCED TO A MINIMUM.

SEYMOUR STREET
RIVER ROAD ARTERIAL ROUTE
ROBINSON STREET TO
WEST CITY LINE

STATE OF NEW YORK
DEPARTMENT OF PUBLIC WORKS

THE TONAWANDAS URBAN AREA REPORT

0 200 400
SCALE IN FEET



CITY	COUNTY	CODE	CITY	COUNTY	CODE
Albany	Albany	H 1	New York City	Kings	M 1
Amsterdam	Montgomery	G 6		Queens	M 2
Auburn	Cayuga	E 3		Bronx	M 3
Batavia	Genesee	C 3		New York	M 4
Beacon	Dutchess	K 5		Richmond	M 5
Binghamton	Broome	J 1	Niagara Falls	Niagara	A 2
Buffalo	Erie	A 1	No. Tonawanda	Niagara	A 2
Canandaigua	Ontario	C 6	Norwich	Chenango	J 2
Cohoes	Albany	H 1	Ogdensburg	St. Lawrence	F 3
Corning	Steuben	D 2	Olean	Cattaraugus	B 2
Cortland	Cortland	E 4	Oneida	Madison	E 5
Dunkirk	Chautauqua	B 1	Oneonta	Otsego	J 3
Elmira	Chemung	D 1	Oswego	Oswego	E 2
Fulton	Oswego	E 2	Peekskill	Westchester	L 1
Geneva	Ontario	C 6	Plattsburg	Clinton	F 5
Glen Cove	Nassau	N 1	Port Jervis	Orange	K 7
Glens Falls	Warren	H 5	Poughkeepsie	Dutchess	K 5
Gloversville	Fulton	G 5	Rensselaer	Rensselaer	H 7
Hornell	Steuben	D 2	Rochester	Monroe	C 1
Hudson	Columbia	K 4	Rome	Oneida	G 1
Ithaca	Tompkins	D 4	Rye	Westchester	L 1
Jamestown	Chautauqua	B 1	Salamanca	Cattaraugus	B 2
Johnstown	Fulton	G 5	Saratoga Sp'gs	Saratoga	H 4
Kingston	Ulster	K 2	Schenectady	Schenectady	H 3
Lackawanna	Erie	A 1	Sherrill	Oneida	G 1
Little Falls	Herkimer	G 2	Syracuse	Onondaga	E 1
Lockport	Niagara	A 2	Tonawanda	Erie	A 1
Longbeach	Nassau	N 1	Troy	Rensselaer	H 7
Mechanicville	Saratoga	H 4	Utica	Oneida	G 1
Middletown	Orange	K 7	Watertown	Jefferson	F 2
Mt. Vernon	Westchester	L 1	Watervliet	Albany	H 1
Newburgh	Orange	K 7	White Plains	Westchester	L 1
New Rochelle	Westchester	L 1	Yonkers	Westchester	L 1

NEW YORK STATE
CODING MAP

STATE OF NEW YORK
DEPARTMENT OF PUBLIC WORKS

SUMMARY OF ORIGINS & DESTINATIONS

THE TONAWANDAS URBAN AREA REPORT

NEW YORK STATE DEPARTMENT OF PUBLIC WORK

ORIGINS \ DESTINATIONS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	51	52	53	54
1		57	32	26	6	6	26	9	4	12	13	18	21	13	6	3	14		
2	151	10	49	72	24	39	77	10	18		13	51	32	41	10	27	32		
3	125	145		44	14	76	99	27	40	59	25	124	42	100	19	24	63	2	5
4	187	147	70		8	45	26	16	51	44	3	71	12	55	3	11	60		
5	144	159	25	34		80	51	4	34	22	6	63	3	101	34	3	22		4
6	29	50	10	18	30		10	16	2	10	18	16	20	24	6	5	4	5	
7	192	411	107	107	38	106		10	17	11	21	35	31	65	74		60		3
8	191	198	64	49	18	66		2	5	13			39	27	57		27		4
9	38	103	33	8	4	17	7	13	5	13	10	4		7	6	57	24		3
10	136	126	102	25	13	48	3		19		5	53		20	36	33	18		
11	193	237	99	21	16	28	36	5	3	20		115	7	61	34	10	26	13	
12	419	538	211	118	34	110	73	16	37	20	45		106	220	113	33	67		
13	28	77	16	15	6	14				10	5	7		7	16		14		
14	45	75	52	86	11	9	52	7	7	3	28	153	7		40	18	24		
15	9	27	6				6	9			7	6	7	18		7	9		
51	62	115	67	21	25	49	13	36	138	62	59	75	18	59	7	16	54	5	
52	64	109	61	58	13	24	50	26	94	79	103	139		62	14	107	5		
53	10	5	5				19	5	3							8			5
54	17	14	8	5		12		7	16	5	15	23	5	25					
55	17	5		2	7	18	3		7			23		3	7	4			
56	17	21		2		28	11	22	21	17	5	42		14	5	21	3		
57	2	7		6			4				5	8							5
58	62	38	32	4	4	10	17	17		12			6	4			4		
59	353	285	340	216	275	221	142	122	103	131	44	148	24	84	69	261	463	33	14
60	372	403	440	200	302	260	206	140	258	178	81	232	82	1279	92	698	1430	8	122
61	86	40	58	26	19	61	19	4	82	32	7	29	24	14	19	125	176	4	
62		4	12	8	4	10		7	24	9	7	7			7	5	65		
63		11	20	11	12	10	7	5	21	9	4	16		7	5	33	59		
64	8	4	6	4				4	5			8			4				
65	4	8			4		8		4				4				24	5	
66	12	4	16			18		4		7		8		4	4	10	12	5	
67		16		4	12				4							18	19		
B	4		4			4						4		4			5	5	
C	11	9	4		12	5	13		8	8		11		7		10	86		
D																	10		
E																	5		
EAST					4		4		2						17		34		
SE						4	4		5							5	176		
NE																	8		
V									8							10	175	10	
T	8	11	12	5	7	4	3	4			5	5		9		20			

APPENDIX - A

TRAFFIC TABULATIONS

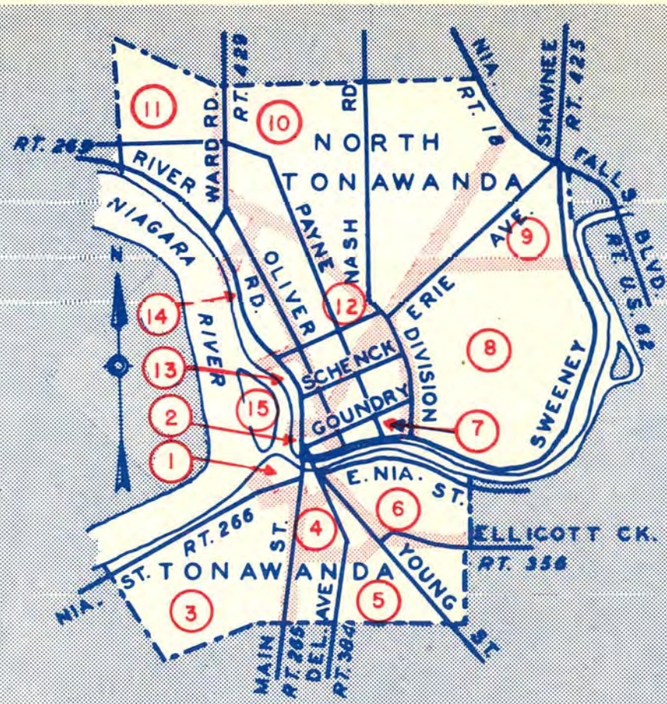
DISTANT ORIGINS AND DESTINATIONS

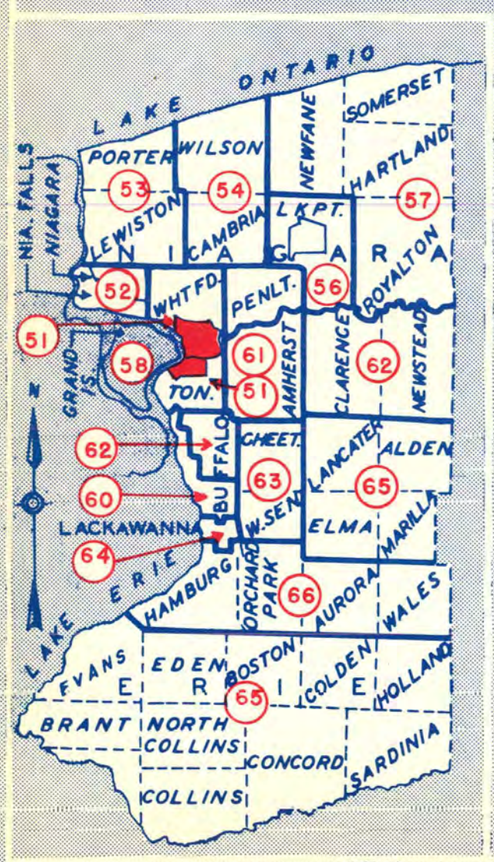
E = G, H, J, P, & Q
SE = K, L, N, O, W, X, Y, & Z
NE = F, R, & S

DESTINATIONS

55	56	57	58	59	60	61	62	63	64	65	66	67	B	C	D	E	EAST	SE	NE	V	T
	4		12	19	45									5					3		
			12	69	135	12					6			6							6
		2	14	51	61	10	7		3												
				34	50			10													4
				26	20	18			10		4			2							
				19	13	7															
				249	341	24	6	10		4		6		10							
	4		10	159	278	12		15	6		4		6								6
	3		7	34	60	14												8		14	
	4			165	143	6	6														
				97	214	8		18			4										
	14	4	10	261	421	91		6		12	15		6	13				4			
				29	59																
			7	45	144		5			9										11	
			4	19	18			4													
			5	84	227	29	8	5	9				8	8			8	5		8	10
	3			110	713	72	8	16		24	8		36	81	16		45	72		168	12
				9	99	8								8						8	8
			3	31	162			8	3					8							
			4	11	11																
				21	18																
				5	3																
				10	7																
	26		8	82	48		7							9				8			42
13	42	21		57		4									4		3	13			59
				23	12																5
				7																	5
				7																	10
																					8
																				10	
					20														4	4	15
					8																14
																				23	16
					17															21	111
																				8	10
					8									5	5	18	16	53	12		98
	4			5	77	5		8			5			8	8	5	8	45		68		

Shaded Area indicates the number of vehicles whose origins and destinations are within the Cities or their imediate Urban Area





KEY MAP
SHOWING LOCATION OF
ORIGIN AND DESTINATION AREAS
STATE OF NEW YORK
NIAGARA AND ERIE COUNTIES
THE CITIES OF
TONAWANDA AND NORTH TONAWANDA
STATE OF NEW YORK
DEPARTMENT OF PUBLIC WORKS
THE TONAWANDAS URBAN AREA REPORT

APPENDIX - B

THE ARTERIAL LAW

ARTICLE XII-B OF THE HIGHWAY LAW

(Chapter 543, Laws of 1944 as amended)

STATE ARTERIAL HIGHWAYS PASSING THROUGH CITIES

Section 349-b. Declaration of Policy

349-c. Design, construction and payment of costs

349-b Declaration of policy. The modernization and the construction of arterial highways which are to pass through cities, will contribute greatly to post-war reemployment and to the stimulation of industrial recovery. The resources and the technical skills that are available to the state for these purposes should be used for the benefit of the cities upon the principle that the construction of such arterial highways is a matter of state concern. However, it is the manifest intention of the state to recognize and to preserve the powers or rights heretofore conferred upon or delegated to any city to regulate the property, affairs or government thereof, in the modernization and the construction of such arterial highways. The integration of such arterial highways in the system of state highways throughout the state contemplates an expenditure of public funds to pay the costs that are attendant upon the fulfillment of a program of the work of modernization and construction as herein mentioned, as well as of the maintenance of such public ways. It is hereby declared to be the purpose of this act to initiate the procedure that is prerequisite to any project of the magnitude herein provided, to the end that orderly progress and equitable distribution of effort and monies may be observed in the administration of this article, and, from time to time, when expressly authorized by the legislature,

any section of such arterial highways may be constituted, constructed, reconstructed, improved and maintained as a part of the state highway system.

349-c Design, construction, and payment of costs. 1. Notwithstanding the provisions of any general, special or local law, the superintendent of public works is authorized and empowered to prepare designs, plans, specifications and estimates for the construction, reconstruction or improvement (1) of any extension or continuation of any highway or route which is now or which shall hereafter be authorized by sections three hundred forty and three hundred forty-one of this chapter, upon any public street or streets in any city outside of the city of New York, which are now or which shall hereafter be designated in this article, and (2) of any existing or proposed main routes or thoroughfares in the city of New York; all of which are designated in this article. Such designs, plans, specifications and estimates may be prepared (a) by the department of public works; (b) by any city herein named, if the preparation of such designs, plans, specifications and estimates are authorized in advance by the superintendent of public works and then upon such terms and conditions as may be agreed by and between such city and the superintendent of public works; (c) subject to the approval of the director of the budget, by the employment of private engineers or engineering firms; or (d) by a combination of such methods. The superintendent of public works may, in his discretion, provide or direct that there be provided in such designs, plans, specifications and estimates, such roadside and landscape development, includ-

ing such sanitary and other facilities as may be deemed reasonable necessary to accommodate the public; provided, however, that such development is within the bounds of any property acquired for purposes connected with the highway system of the State of New York pursuant to this chapter, and any adjacent publicly owned or controlled recreational areas of limited size and with provision for convenient and safe access thereto by pedestrian and vehicular traffic. All references hereinafter contained in this article to the construction of facilities and appurtenances of state highways. or to a section or sections of the arterial system, may be deemed to include the development and facilities mentioned in this paragraph.

2. With relation to any city named in this article, but not including the city of New York:

2.1 The superintendent of public works is authorized to provide in such designs, plans, specifications and estimates for bridges, culverts, drainage, shoulders, gutters, curbs, sidewalks and any other facilities and appurtenances as he may determine.

2.2 The superintendent of public works shall construct, reconstruct or improve such extensions or continuations, including said facilities and appurtenances, in the same manner as other state highways, facilities and appurtenances are constructed, reconstructed and improved pursuant to this chapter. For all the purposes of this section, the jurisdiction of the superintendent of public works shall extend over the entire property affected by the provisions hereof, as such jurisdiction has been obtained, or as such juris-

diction may hereafter be obtained pursuant to the provisions of this chapter. Such sidewalks, facilities and appurtenances shall be maintained or shall be continued to be maintained, as the case may be, by the city in which they are located, or by the agency or unit owning or having control and jurisdiction thereof.

2.3 The governing body of any city named in section three hundred forty-nine-e of this article may apply to the superintendent of public works for a change in such designation of a public street or streets within the boundaries of such city, and the superintendent of public works may grant such application, and in case such application is granted, the additional costs and expenses of the acquisition of property and legal damages caused thereby, and the additional costs and expenses of construction, reconstruction or improvement of the public street or streets as requested in such application shall, pursuant to written agreement, be paid by such city to the state. The monies so required shall be raised by tax or pursuant to the local finance law or in accordance with any local charter or law, as the case may be, and such funds shall be deposited and be subject to requisition in the manner as herein provided in case a greater width or different type of construction is desired by such city.

2.4 A state highway may be constructed or reconstructed through any such city, of such width and type of construction as the superintendent of public works shall deem proper, unless a greater width or different type of construction is desired by such city, in which case the governing body of such city may apply to the superintendent of public works to

provice the width and type of construction desired. The superinterdent of public works may grant such application, if he deems the filing of such application to be timely, and the additional cost and expenses of such width and type of construction, or either of them, shall, pursuant to written agreement, be paid by such city to the state. Whenever the superintendent of public works shall have granted such an application, the designs, plans, specifications and estimates of costs, together with an estimate showing the additional costs and expenses to be borne by such city, to provide for the greater width or different type of construction or both, shall be submitted to the governing body of such city which, if it approves such designs, plans, specifications and estimate of cost, shall by resolution appropriate funds necessary to provide for the portion of the costs and expenses of construction to be borne by such city. Such funds shall, prior to the advertisement for bids for or including the said greater width or different type of construction, be deposited by such city with the state comptroller subject to the draft or requisition of the superintendent of public works, and a certified copy of such resolution shall be filed with the state comptroller and with the superintendent of public works. The monies so required shall be raised by tax or pursuant to the local finance law or in accordance with any local charter or law, as the case may be. Upon the completion of a highway within such city where a portion of the costs and expenses are borne by the city the superintendent of public works shall transmit to the governing body of such city a statement showing the

actual costs and expenses of the additional width or changed construction including a proportionate charge for engineering, and shall notify the city clerk that he will accept the work within twenty days from the date of such notice, unless protest in writing against the acceptance shall be filed by such clerk with the superintendent of public works. In case a protest is filed the superintendent of public works shall hear the same and if it is sustained the superintendent of public works shall delay the acceptance of the highway or section thereof until the same be properly completed. If no protest is filed the highway or section thereof shall at the expiration of the said twenty days be deemed finally completed and accepted on behalf of such city and the state. The provisions of any general or special laws relative to the pavement or improvement of streets and the assessment and payment of the cost thereof shall apply, as far as may be, to such additional construction and the assessment and payment of the cost thereof, except that the provisions of any general or local act affecting the pavement or improvement of streets or avenues in any such city and requiring the owners, or any of the owners, of the frontage on a street to consent to the improvement or pavement thereof, or requiring a hearing to be given to the persons whose premises are subject to assessment, upon the question of doing such paving or making such improvement shall not apply to the portion of the improvement or pavement of a state highway the expense for which is required to be paid by such city to the state.

2.5 Whenever the superintendent of public works deems it necessary to acquire property for the purpose of widening

any such designated street, he shall, before filing the description and the original tracing of any map, or proceeding with the acquisition of such property or the work of construction, reconstruction or improvement, transmit the designs, plans, specifications and estimates of cost for the construction, reconstruction or improvement of the extension or continuation upon said street to the governing body of such city in which such designated street or any portion thereof is located. The governing body of such city, after the receipt of such designs, plans, specifications and estimates of cost, may conduct a public hearing or hearings upon such notice as such governing body shall deem reasonable, but not less than ten days, to the superintendent of public works and to such other party or parties, deemed by said governing body to be interested in the project. In any event and within sixty days or within such other period of time as may be provided by the provisions of the charter of such city, after the receipt of the designs, plans, specifications and estimates of cost, the said governing body shall, by resolution, duly adopted by its members, approve, disapprove or recommend modifications in such designs, plans, specifications and estimates of cost as the public interest shall require. Within ten days after the adoption of the resolution, the clerk of such governing body shall mail a certified copy thereof to the superintendent of public works. The form of the resolution shall be prescribed by the superintendent of public works. In case such governing body shall disapprove the designs, plans, specifications, and estimates of cost, without proposing modifications, the

superintendent of public works may, in his discretion prepare and submit to such governing body for approval other designs, plans, specifications and estimates of cost, for the construction, reconstruction or improvement of the extension or continuation within the bounds of such city or in his discretion he may proceed with the work of construction, reconstruction or improvement within and confined to the existing width of the pavement of said designated street in the affected location. In case such governing body shall disapprove the designs, plans, specifications and estimates of cost, and shall recommend modifications, the superintendent of public works may approve the designs, plans, specifications and estimates of cost, so modified, or recommend other modifications for approval, and said extension or continuation shall be constructed, reconstructed or improved in accordance with such designs, plans, specifications and estimates of cost, as finally approved. When the designs, plans, specifications and estimates of cost for construction, reconstruction or improvement of an extension or continuation as aforesaid have finally been approved as hereunder provided, no resolution thereafter adopted by the governing body of such city shall rescind, annul or modify such prior resolution either directly or indirectly excepting upon the advice and with the consent of the superintendent of public works. Upon the failure or omission of the governing body of any such city to act within the time and manner herein required, the said designs, plans, specifications and estimates of costs shall be deemed to be approved so far as such governing body is concerned.

2.6 Any property which is deemed by the superintendent of public works to be necessary to carry out the provisions of this section, shall be acquired by him pursuant to section thirty of this chapter. The costs and expenses of such acquisition of property and any liability incurred by reason thereof, including legal damages caused by such acquisition and by the work of constructing, reconstructing or improving such extensions and continuations, including legal damages caused by such work of construction, reconstruction or improving, all as provided in section thirty of this chapter, shall be paid by the state in the first instance and shall be borne as follows: Fifty percentum by the state and fifty percentum by such city affected thereby.

2.7 Before property shall be so acquired in such city for the purpose of this section, the superintendent of public works shall transmit to the governing body of such city an estimate showing the proportionate costs and expenses of such acquisition as such costs and expenses are specified in section thirty of this chapter, whereupon and within ninety days after the transmittal of said estimate such city shall (a) by resolution, appropriate the funds as shown in said estimate, (b) deposit such funds with the state comptroller subject to the draft or requisition of the superintendent of public works, and (c) file a copy of the resolution with the state comptroller and with the superintendent of public works. Upon the completion of a highway within such city where a portion of the costs and expenses of the acquisition of the property are borne by the city, the superintendent of public works shall transmit to the governing body of such

city a statement showing the actual costs and expenses of such acquisition as hereinbefore mentioned, and shall notify the city clerk of the amount due from or to be returned to the city, as the case may be. Any sum due the state shall be paid by such city within sixty days after the date of the transmittal of said statement and the funds therefor shall be raised by tax or pursuant to the local finance law, or in accordance with any local charter or law, as the case may be.